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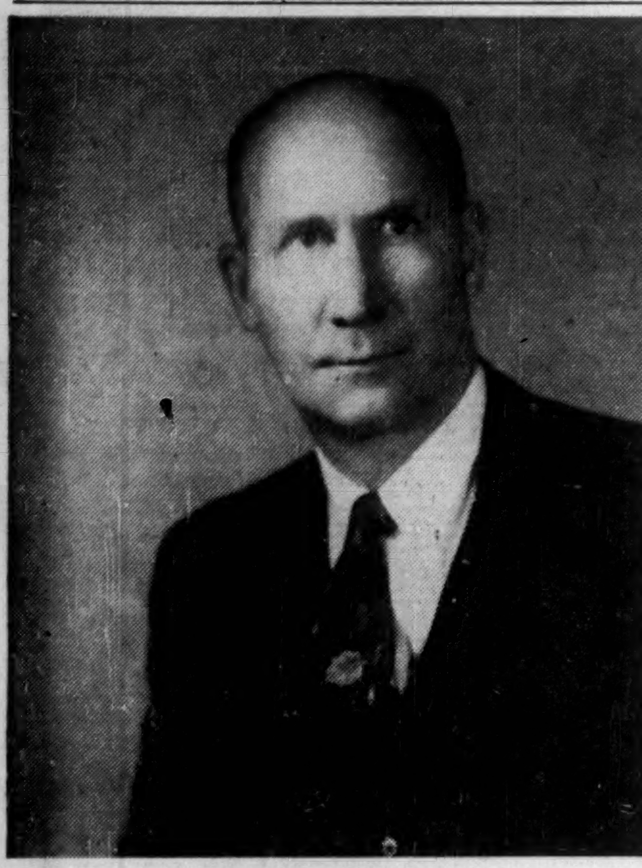
Heads Radio Engineers



Dr. John T. Henderson, principal research officer at the National Research Council, Ottawa, is 1957 president-elect of the 55,000-member international Institute of Radio Engineers. The 30th anniversary of the institute in Canada, which has 2,000 members and 13 sections coast-to-coast, will be marked next week in Toronto with a three-day convention and exposition, the biggest ever held in this country. Dr. Henderson is at present regional director of the IRE in Canada.
(Personality sketch, P. 6.)

THE NATION'S BUSINESS

The New Leader

All conscientious citizens — including devoted Liberals and Socialists — will hope that, in the interests of healthy political institutions, the Conservatives do a good job when they are selecting a successor for George Drew.

He must be at an age which will bring him to the peak of his political usefulness five, ten or fifteen years from now.

He should be a man who is able to command a national, and not merely a regional, following. In particular, the Conservatives must hope for a leader who can pull votes outside Ontario. The party cannot survive without those votes, much less win an election.

There's more than simple arithmetic to choosing a political leader, but to forget the political arithmetic can be fatal. To achieve a clear majority in the Canadian House of Commons, a party must have 133 seats. To get a majority, the Conservatives would have to have all Ontario seats, plus all 48 seats of the mid-west; or, all 85 Ontario seats, plus all 33 Maritime and most of the 22 B. C. seats.

Of course. Canadians don't vote in provincial blocs—not even Quebec is 100% solid. But that only emphasizes the fact that a party with exclusive ties to one region is doomed before it begins.

This arithmetic will have to be in the minds of those who survey the field for candidates for the Conservative nomination. Identification with Ontario so direct that it can't be dissipated between now and the election will be a handicap. An exclusive relationship to any other single section of Canada is almost as bad.

Whoever they choose, Conservatives would be unwise to treat the nomination as a popularity contest within the party, or a reward for merit, however distinguished: The convention might learn something from the Republicans of the United States. After a long era in the political wilderness, they lost twice with Dewey, but won when they gave the nomination to a party outsider.

And what did that outsider have to offer? The man from Abilene had some experience of big affairs. But what won him both the nomination and the election was the fact that his moral stature won the respect and confidence of millions of people. Here was a man who, the masses believed, could be trusted.

* * *

This Concerns Us All

There was good news for all Canadians coming out of the National Forestry Conference at Winnipeg last week.

There is enough timber in Canada to go on supplying the projected needs of our forest industries in perpetuity, it was reported, and, if we act wisely, there will be sufficient to supply a greatly expanded industry in future.

That is a very different picture from that which used to be painted. A decade or two ago we were told that a wood famine was inevitable: that our vital timber resources were being used and wasted faster than we could ever hope to replace them.

There has been a big change for the better in forestry operation and thinking since then. The old idea that lumber and pulp wood was a one-crop, "slash-and-clear-out" operation has been discarded. In its place has come a growing realization that timber is and should be a regular crop, a crop like wheat or fish or fur, to be grown continuously. But realization must be followed by action, and specifically in these directions.

1. We must do much more to reduce losses from fire, insects and decay.

Each year, the experts estimate, we lose to these three enemies enough wood to supply another forest industry as large as the one we have. The solution to this problem lies in scientific advances which we can expect, more effective public education, more protection equipment, and development roads.

2. We can reduce losses from waste by using more of each tree cut, by using more kinds of trees some of which are still unpopular with the mills, and more of each log delivered to the mills.

Substantial progress has been made here it is true. Not so long ago, for instance only spruce was considered fit for pulp. Now we are using dozens of different trees including hardwoods. Until the last war hemlock was considered by many lumber men as nothing but a weed. This is not so now. But we must do still more to convert present mill wastes into saleable products.

3. We must put idle forest land to work, and we must make productive areas work harder at their business of growing wood. To do this we must build forest development roads to gain access to timber that has stopped growing and should be cut. We must take a new look at the thousands of square miles that lie along the fringes of our good agricultural land, areas that are at present neither good forest nor good farm.

We must have more foresters, more research.

The costs of a wise program are trivial indeed measured against the direct returns alone from a growing forest industry with its raw material supply guaranteed in perpetuity.

* * *

Our New Giant

The electron, we are told, is the smallest particle of matter known to man, but the electronic industry that has grown out of the science of generating, controlling and utilizing those tiny particles, is a new Canadian giant.

Before the war few Canadians had ever heard of the electronics industry. Output, mostly in connection with radios and other communications equipment, only amounted to a few millions a year. Today value of products and service in this industrial complex runs over $500 millions annually. The industry employs over 25,000 workers and embraces literally hundreds of companies.

The amazing story of that development and what it means to the Canadian people will be found on pages 49-62 of this issue.

'Good First Quarter' Says Steel Demand

Books Not Yet Open For First Three Months Of 1957, But Spillover Orders Indicate Capacity Operations — Big Rush On Plate, Bar

By W. L. DACK

What's the business outlook for early 1957?

One of the best barometers of business health—steel demand—is setting a pattern which promises the boom will extend into the first quarter of 1957 at least.

High steel demand is definitely going to hold into the spring of next year. Although steel makers haven't yet opened their books for first quarter 1957 business, the rate of spill-over demand from unfulfilled fourth quarter orders points to capacity mill operations well into the new year.

The demand is far from even across the steel makers list of products. Actually, cold rolled sheets are easier to obtain than at any time over the past year and a half. Hot rolled sheets have become a trifle easier in recent weeks.

But the change is not enough to even consider removal of allocations yet, millmen say. Besides that, there's a good chance that heightening orders in November-December period will tighten the whole supply picture again.

Against this is the phenomenal demand for plates, bars, structurals. The lusty capital goods program being pushed across Canada with its "big inch" oil and gas pipelines, St. Lawrence Seaway, dozen or so big hydro-electric programs, heavy railway programs, bridges, buildings, and the heavy equipment to stock them, is putting much of explosive steam under the steel situation.

Demand for plates, for instance, is so far ahead of domestic plant capacity and even indicated supplies from abroad, that tight supply situation will likely continue throughout all of 1957 and probably well into 1958. Railway companies with their big rail car orders; pipeline companies with their unprecedented demand for wide plate to roll into seamless pipe are certainly accentuating the tight supply situation.

Demands for bars for structurals, reinforcing steel for the booming building industry, for use in rails, auto manufacture, agriculture, industry, countless types of heavy equipment, is continuing at unprecedented rates.

The tight steel supply situation
(Continued on page 3, col. 4)

Canadair Strong Contender For RCAF Jet Trainer Job

By CLIVE BAXTER

MONTREAL (Staff) — The RCAF is looking for a basic jet trainer, fast but gentle.

Britain's contender, the **Hunting Percival** Jet Provost, this week was getting detailed inspection by top RCAF brass in Ottawa.

If the RCAF accepts the Provost, the plane will be built in Canada. And, a spokesman for Hunting Percival told The Financial Post at midweek:

- The airframe contract would probably go to **Canadair Ltd.**, Montreal.
- The engines would be built by **Orenda Engines Ltd.**, Malton, Ont.

This was extra good news for Canadair, whose '57 project book already looks like the busiest since the Korean War.

New Projects

New projects plus fresh orders for existing planes are expected to keep the Canadair plant humming.

At midweek the Israeli government was concluding a cash-on-the-line deal to buy 24 badly needed Sabre jet fighters at a cost, with spares, of $10 million.

Meanwhile, persistant rumors had last minute details being added to a West German contract for some 300 Sabres at a cost of $200 million.

The German order is not yet definite. If it is signed, a large part of the cost will be carried by the U. S. Off Shore Procurement Program. Such a sale would mean a new high for Canadian aviation. With the world rights for the Sabre assured, Canadair representatives are touring the world with order books ready.

Behind closed doors, the giant CL-28 anti-submarine patrol bomber production line at Canadair is beginning to roll. At least 50 of these aircraft, derived from the Bristol Britannia airliner, are to be built for the RCAF.

CL-44 Canadair Job

It is now almost certain, as well, that the CL-44 military transport — again a Britannia basic design suited to Canadian requirements — will be produced by Canadair
(Continued on page 3, col. 3)

Engine Without Crankshaft Spurs U.K. Campaign Here

By CLIFFORD FOWKE

A new type of engine, which many engineers believe may oust both the internal combustion and conventional diesel engines in a number of fields, is coming on the Canadian market.

A major U.K. company—**Associated British Engineering Ltd.** which has already set up a Canadian subsidiary, **Associated British Engineering Canada Ltd.**, in Montreal, — is now in process of setting up servicing and sales centres across the country for this and conventional engines which it manufactures.

Known as the free piston engine, it consists of one or more free-piston gas-generators supplying a turbine. Connecting rods and crankshafts are eliminated. The gas-generator is a single-cylinder two-stroke supercharged diesel engine with horizontally opposed pistons.

Uses of the engine are presently limited to larger installations such as generating stations and stationary plants, marine propulsion and rail traction, but many engineers believe that developments over the next five or six years could see its application to heavy trucks, earth-moving equipment, etc.

General Motors Corp. has secured rights for it in the States and both G.M. and Ford Motor Co. are presently reported working on its development in the U. S.

Prospect of Market Battle

There is also a possibility that a battle for markets for the engine in its present stage of development could start in Canada between Associated British Engineering and General Motors. The U. K. firm which holds Commonwealth rights for the engine, controls six manufacturing companies in Britain, and has set up a seventh company called the **Free Piston Engine Co.** It has already gained a foothold in this country through purchase of **Hepworth Lachine Engineering Co.** in suburban Montreal, to pro-
(Continued on page 8, col. 1)

Gas Line Financing Coming Soon

Canadian institutions will be given every opportunity to participate in the financing of the **Trans-Canada** gas pipeline, The Financial Post is informed.

Although the broad outline of the financing plan has now been drawn up, there are a number of points yet to be cleared away.

If these fit into place as is hoped, then the issue will likely come to the market around the first week in November.

This, one of the largest undertakings in Canadian and U. S. investment history, is expected to total about $235 million.

In the meantime, the Trans-Canada Pipe Line partners and the underwriting group are keeping their fingers crossed over the condition of the stock market, which could affect the timing of the offering. It's obvious now that the tight money policy instituted by both U. S. and Canadian governments is having a cumu-
(Continued on page 3, col. 5)

'57 Car Parade on Soon; Bodies Lower, Prices Up

By JACK McARTHUR

Canadians soon will be shopping for 1957 cars.

From early October until mid-November, a steady succession of dazzling, restyled North American-made cars will parade before the public like bathing beauties on a boardwalk.

The debut of each will signal a new shower of pastel-colored, chrome-flashed publicity.

It's well-known that prices will be higher (possibly up to 5% higher). But automakers are betting the billion dollars they spent on model changes that the public will speed its carbuying pace, lured by more extras, more power, more dealers willing to shave list prices and the longer, lower, wider look of the new cars themselves.

Prices of Ford of Canada's new cars will average a 4% increase. Ford figures this a moderate boost for a "vastly changed" and improved car.

The outlook:

- Fourth quarter auto output in Canada should hit a new high (Ward's Automotive Reports estimates 114,000 units).
- Fourth quarter sales may very well set a record for the October-December period.
- Sales for the calendar year 1956 may approach a record 400,000, compared with about 385,000 last year, the previous peak.
- Canadian car producers, if sales continue their buoyant way, will have to hurry plans for expansion of production facilities.

Here's the bow-in schedule for new cars in Canada:

General Motors: Lower-priced cars probably in early October; higher-priced in early November.

Ford: First of the major producers into the marketplace. Debuts of lower-priced cars are set for early October; higher-priced for late October.

Chrysler: Aiming at pushing Ford from second place in total Canadian new car sales, Chrysler dealers will likely start selling 1957s in early November. With Chrysler, as with others, some dealers may beat the gun.

Studebaker-Packard: Early in November for Studebaker; early in January for Packard.

American Motors: Early November.

Production of 1957s is on the
(Continued on page 3, col. 3)

Inside

THE WONDER world of electronics, the science which affects every Canadian's life almost every day: A feature report .... pp. 49-62

YOU CAN LOWER your own fire insurance premiums by getting rid of fire hazards. See feature report . pp. 24-26

ONE OF THE WORLD'S longest subsurface power cables this week pumped much-needed power to Vancouver Island .... pp. 14-15

YOU CAN CHECK your own TV tube with this new testing gadget. See What's New p. 20

WHEN THAT NEXT pay raise comes, will you really get it or will inflation grab it? p. 17

McGEACHY looks at France where quarreling stops . p. 7

We Can't Lose World Oil Game

Canada Holds A High Hand In Oil Poker, Suez Settlement Or Not; The Middle East's Shakiness Means Long-Term Oil Investment Here

By FRANK KAPLAN

Nasser of Egypt is playing a poker hand in international politics in which Canada can't lose.

His seizure of the Suez Canal and current trumpeting of long-range plans of Middle East and Soviet politicians to squeeze the western world out of Middle East oil is bound to benefit investors in Canadian oil industry.

That's the opinion of investment and oil industry specialists currently trying to sort out the impact of "nationalist" developments in the Middle East in order to draw up longer-run plans.

Nasser's political juggling has forced the Free World's oil industry to face one fact squarely:

The Middle East is an undependable source of vital oil.

It doesn't matter if Suez problems are solved or if the canal continues an international football for years, world oil companies now are being forced to re-assess their plans and remove the dependence of Western Europe, the U. S. and Canada on large supplies of Middle East oil.

The impact of this switch in thinking will likely be hardest on Canada—certainly on North and South America.

The international oil industry will make do with what it has under way now in far-flung parts of the world, but more eggs will be tucked in the Canadian basket to hatch in 10, 15 or 20 years.

These Firms Stand To Gain

Here are listed Canadian companies reported by the 1956 issue of The Financial Post Survey of Oils to have interests in more than a million gross acres of potential oil and gas lands.

Each company must be examined separately since net interests, location of land and other factors are important considerations in the assessing the attractiveness and potential of their holdings.

The Land-Holders

	Recent Price $	1956 High $	1956 Low $
Bailey Selburn ..	17¾	20	8.80
Banff	3.20	4.20	1.60
British American	45¾	50⅛	35
C'lg'ry & Edm'nt'n	28⅝	33	19⅜
Calvan	5.00	6.75	5.00
Canada Oil Lands	3.05	4.00	1.90
Canada Southern	4.90	6.25	1.57
Cdn. Atlantic	6.90	9.00	5.65
Cdn. Homestead .	2.25	2.70	2.00
Cdn. Pipelines ...	3.75	4.60	2.74
Cdn. Prospect ...	5.10	6.50	4.25
Cdn. Williston ..	3.30	4.50	2.65
Central Leduc ...	4.85	6.00	2.11
Charter Oil	2.00	2.50	1.65
Con. Dragon	.70	.77	.35
Del Rio	3.75	4.90	1.40
Devon Leduc	1.51	1.99	1.40
Dome Exploration	8.50	10.00	5.50
Fargo Oils	2.85	3.60	1.90
Gen. Petroleum .	5.50	7.00	4.70
Husky Oil	13	14	8.35
Imperial Oil	58	62½	36⅛
Jupiter	2.15	3.10	2.00
Merrill	16	22½	11¾
Medallion	3.35	3.50	3.35
New Superior ...	2.35	3.00	2.15
New Gas	1.50	2.20	1.48
Pacific Petroleum	16⅞	20⅛	12½
Peace River	10	13	7.85
Prairie Oil	4.25	6.90	3.30
Royalite	15½	18¼	12½
Scurry-Rainbow .	3.65	3.90	1.75
Trans-Empire ...	2.17	2.70	1.60
Triad	9.80	12.00	5.50
Western L'seholds	6.10	8.00	5.00

Tomorrow's Pattern

From the talk that is going on among worried oil industry officials, this is the pattern that appears to be developing for the future growth of the Canadian oil industry.

- A bigger-than-ever stake in politically-safe Canada. The biggest rush of foreign money and foreign companies this nation has ever seen will likely occur over the next five or 10 years. And emphasis will be on acquiring a stake in western Canada's oil and gas potential.
- Biggest beneficiaries of this rush will be companies with large and attractive land interests. With Canadian proven reserves at about 3.5 billion bbls., and a potential conservatively estimated at 30 billion bbls., (some estimates run to as high as 80 billion bbls.) the international oil firms will try hard to close this gap between proven and potential. Therefore they will concentrate on probing new areas, gambling millions of dollars on wildcats in the hope that one click will give them the backlog of reserves they will need for 20 years.
- Suez and Middle East worries will also mean a new assessment and importance for the Athabasca Tar Sands — the biggest untapped known source of oil in North America. The Athabasca Tar Sand dream may be on the verge of becoming a reality. **Royalite Oil** is reported to be about ready to pop with an economic and feasible method for treating these sands. Of course, if world crude oil prices rise enough, these sands would become economic sources.
- Another beneficiary of the changing world oil condition could be the St. Lawrence Lowlands where efforts to find oil are already being accelerated. Development of major fields in this area would help meet eastern seaboard oil needs.

These potential gainers from Nasser and Soviet intrigue will carry a premium value, it is predicted. World oil concerns will pay premium prices in the hope of finding some of that 27 billion bbls. or more of undiscovered oil estimated to underly Canada. The scramble for land will probably be the wildest since the Leduc discovery in 1947 that started Canada on its present phase of oil and gas progress.

Pipeline Outlook

But the expected surge in exploration will have further wide-spread effects as efforts of the oil industry pay off in greater reserves.

New oil finds will have to be moved to markets — in eastern or western Canada, in the U. S. This will mean a new wave of development for pipeline companies. Already, the pipeline firms are drawing up plans for expansion in anticipation of disruptions in the Middle East which would place an immediate demand on their facilities (FP, Sept. 22).

But looking ahead into five or
(Continued on page 3, col. 2)

Canada Proposes Changes To Strengthen IMF Role

By MICHAEL BARKWAY

WASHINGTON (Staff) — Canada took the initiative at this week's meeting of the governors of the International Monetary Fund in proposing a change of procedure designed to strengthen the Fund's influence on national monetary policies.

The method suggested in a speech by Finance Minister Harris before the assembled finance ministers and central bankers from 58 countries was modest and quite unspectacular; but behind it lies growing concern at the relative ineffectiveness of this fully international body compared with merely regional organizations like the European Payments Union, in which Canada has no say.

What Mr. Harris asked the other countries to consider was merely a different way of being represented at the Fund's headquarters here. At present, I.M.F. is run by a permanent board of 17 executive directors which is supposed to be in continuous session. It is paid as a full-time job, and most of the executive directors are full-time officials spending all their time at the Fund's headquarters.

One of the exceptions is the Canadian representative, Louis Rasminsky. He also has a full-
(Continued on page 3, col. 1)

THE SIGNS AND PORTENTS

IT MAY ONLY BE election talk, but Newfoundland is again buzzing with stories of a possible third pulp and paper mill. Negotiations are said under way in St. John's with two representatives of U. S. interests.

* * *

HIRING OLDER MEN for simple jobs may be answer to your problem of getting them done well. In 1947, National Employment Service found 45% of men seeking jobs were over 45 and most employers wouldn't touch them; started special Counseling Service resulting in adoption by hundreds of employers of policy of hiring older persons as clerks, messengers, etc.

* * *

COMPETITIVE atomic energy-produced electric power may come in as little as five years. Trade Minister Howe told Signs and Portents: "That's about as optimistic as I can get." Chalk River scientists, not quite so optimistic, say 10-15 years.

* * *

THESE NEW PILLS really permitted 392 of 490 smokers to stop without discomfort, say the researchers. Made of lobeline sulphate, which reached bloodstream as a "lobeline alkaloid," replacing the smoker's nicotine alkaloid on which his body chemistry had become dependent. Didn't create a craving for the pills.

* * *

CANADIAN EXPORTERS take notice: A world-wide pinch in dry-cargo shipping space is on the way, even if Suez Canal stays open. One reason: Record U. S. exports, including coal to Europe, farm surpluses all over. If canal is closed, it will make the situation infinitely worse.

* * *

A QUOTE WORTH noting: "During the past decade there have been at least five critical situations that could almost certainly have led to world conflict . . . (but) through the United Nations, mankind is steadily making headway in its steadfast search for peace."—Health Minister Paul Martin.

* * *

INCREASED URBAN growth may stem from use of new household sewage disposal plant. Uses same principle as large-scale civic plants — bacteria transform waste into harmless liquid or gas; now would cost $800 to $1,000 in Canada. Widespread use would reduce by 50% the 100 gal. water the average city dweller uses daily, removing limiting factor on growth of some areas.

* * *

HOW TO SAVE the "lost" high school graduates, i.e., those with university-calibre talents who don't attend university, is also worrying U. S. educators, business leaders. Suggested ways to get the 200,000 American teen-agers involved to college: 100,000 scholarships, motivation-producing books, films. We should worry more than they: U. S. enrollment per 1,000 pop. is 15, our 4.94 (Russia's 19.6).

RCAF IS THINKING of cutting out pilot training in propeller-driven Chipmunks and Harvards, putting groundlings right into two-place jets alongside instructors. Experiments in France are being watched and 400-mph. jets (T-33 speed: 500 mph.) considered for purchase. Problems: (a) Jets' cost, (b) what to do with prop craft.

* * *

BIGGER PUSH is upcoming to spread work the year around. National Employment Committee budget is up from $25,000 to $70,000, will probably be only a fraction of what chambers of commerce and similar groups will spend on advertising, now that most are convinced winter work pays off in more business for all.

* * *

HARD ON THE HEELS of Canadian apple industry's decision to bump Vitamin C content of apple juice up near that of orange juice comes flash from Puerto Rico: Shipments starting of "acerola" juice, containing 80 times the orange juice content of Vit. C. You won't be able to drink it straight for a while, though; it's going into baby food. Acerola is a cherry-like fruit.

* * *

NRC SCIENTISTS will announce what "G" really is in about six months. The 32 ft./sec./sec. value is generally put between 981.600 and 981.630 cm./sec./sec. NRC will announce a value between 981.610 and 981.620. The quibbling is necessary for accuracy to one part in a million.

* * *

"AUTOMATION" is entering the biochemical laboratory too, with development of two machines for analysing blood. One in 2½ min. vs. 2½ hr. for manual methods) produces written graph showing amount of sugar, urea or calcium in sample; the other provides quick acidity - alkalinity determination.

* * *

YOU'D WALK AWAY from this auto after 50-mph. head-on collision. Everyone sits in separate bucket seats (one is rear-facing) strapped in with safety belts. Driver is protected by chest cushion centred between steering levers (instead of wheel with chest-piercing shaft). There's roof, dashboard padding.

* * *

PROHIBITION IN CANADA and U. S. set Mr. Average Citizen figuring out ways to circumvent the law. In New Delhi, India, where new partial prohibition forbids public drinking, same thing is happening. One custom, family swimming on Sundays with a thermos bottle of lemonade for the children, is changing; many families now take two thermos bottles, with special "lemonade" for the parents. Street vendors of coconut milk are coming out with a "special" brand for old customers.

Stock Market Highlights

Industrials

Canadian industrial stocks still sliding, at times fairly steeply as slumping Wall Street sets the pattern. For details on some of the stocks that moved, see page 4.

Actually, industrial issues are well above earlier levels. For a graphic examination putting the present market drop in relation to market movements of the past few years, see page 11.

Mines and Oils

Mining and oil issues hit by several burst of brisk selling for some sharp tumbles, particularly among more speculative, lower-priced issues. For details on some of the issues that moved, see page 42.

Base metal stocks were among hardest hit with disturbing aspect to analysts an increase in selling as prices slide.

Western oil and gas issues also lower although selling pressure doesn't appear particularly heavy at any time.

A classic, lightweight balmoral oxford. Trim and clean-cut in line, to follow the neater look so predominate in fine clothing to-day — carefully crafted and finely stitched in smooth, supple black calf leather. Just one from the more than 50 lines of Men's Shoes that wear the name

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Picture of a woman buying a rug

THIS WOMAN is deciding upon the colour of her new rug. Two minutes ago, she selected the store where she would buy it . . . a radio voice she knows and trusts helped her decide. Radio "salesmen" are invited into 97.1%* of Ontario homes and chalk up an impressive total of sales.

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United States: Canadian Station Representatives Ltd.

* *based on BBM Radio Homes figures.*
** *based on Sales Management's Survey of Buying Power, Canadian Edition, May 1956.*

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TORONTO

Trend of Business

Gross national product surges forward again. During the second quarter GNP running at annual rate of $29.5 billion, 3% higher than in the first quarter of this year. Compared to the first half of '55, the first six-month gain this year is 10% in value terms. But because of higher prices, advance is 6%-7% in terms of actual physical volume of production.

Providing the push behind rising GNP are these factors: (1) high level of investment spending on fixed capital items such as new plants and machinery; (2) high rate of inventory accumulation by business; (3) heavy import balance. Rising output is concentrated in durable goods and construction. In the second quarter alone, high-income, fully-employed consumers spent 11% more on durable goods, 6% more on non-durable items than a year earlier.

Manufacturers' shipments show sturdy gains. In July goods valued at $1,806 million were shipped from Canadian factories, less than in the month before, but 14% higher than a year earlier. First seven-month shipments up 11.6% over those in same period in '55.

Anticipating still larger shipments, manufacturers boost inventories. Standing at $4,525 million by the end of July, inventory held was fractionally higher than a month earlier—and 11.2% above the level of a year before.

New orders show no signs of drying up. During July new orders placed with manufacturers totaled $1,787 million — little changed from the volume placed in June — and 11% higher than in July '55. At the beginning of August, unfilled orders were valued at $2,713 million, almost 4.9% higher than a year earlier.

Tight manpower situation continues through August as predicted earlier this year. At mid-month over 5.8 million Canadians held down jobs, 34,000 more than a month earlier and 182,000 more than a year before. Over the month, higher farm employment more than offset declines in nonfarm employment, part of which represented a temporary shift of logging and construction workers to meet harvesting needs.

Unemployment exceptionally low at mid-August and likely to remain so until early fall. At the middle of August 103,000 were looking for work, about the same number as in the month before—though well below year earlier 131,000. How tight is the situation? At mid-August only 1.7% of the labor force was unemployed as against 2.3% a year before.

Dividend payments on the rise reflecting the booming pace of business. Nesbitt, Thomson & Co. estimates this month's payments from industrial, mining, commercial, utility and banking companies will register 307.8 on their index where 1935-39 =100. This means September payments will run 1.4% higher than those in August, 14.3% above level of a year ago and 24.6% higher than two years ago.

A look at the trend in refinery receipts: In June Canadian refineries received 9.1 million bbls. from foreign sources and 9.9 million from domestic wells. Forecast of receipts indicate July deliveries will have been 10.9 million from abroad + 11 million from Canadian sources; August 10.7 million from abroad + 11 million domestic; September 10.2 million foreign +10.8 million domestic.

Newsprint output climbing steadily. August production reached 570,377 tons, up 5.7% from same month last year. Year to date production is close to 4.3 million tons, up 5.2%. Canadian market, though absorbing only 7.4% of all output, has used 12.3% more newsprint in the first eight months of this year than was the case in '55. Exports to the U. S.—81.2% of output—are 3.7% higher so far this year.

Wholesale sales setting big new records. In July, sales totaling $660.6 million were running 16.8% above those a year earlier. Gain in the first seven months also 16.8%; total value, $2,137 million. All trades chalking up increases. Major advances in first seven months: auto parts $214 million (+11.4%); groceries $163 million (+10.8%); construction materials $105 million (+ 10.9%); **industrial equipment $104 million (+38.2%); hardware $41 million (+15.8%); newsprint, paper $38.5 million** (+24.2%).

Major Weekly Indicators

	Latest Week	Week Ago	Month Ago	Year Ago
Department store sales, % ch. from year earlier	+4.1%	+9.1%	+9.0%	+14.8%
Carloading totals (cars)	80,744	‡145,886	92,255	75,810
Eastern Canada (cars)	51,946	‡ 91,426	59,705	51,664
Western Canada (cars)	28,798	‡ 54,460	32,550	24,146
Iron & Steel (mfd.) (cars)	1,452	‡ 2,652	1,615	995
Ores, concentrates (cars)	12,505	‡ 20,308	14,506	9,608
Base metals (cars)	713	‡ 1,141	670	629
Lumber, timber, plywood (cars)	3,976	‡ 7,506	5,128	4,889
Cement (cars)	1,071	‡ 2,026	1,354	892
Passenger car production (no.)	1,740	713	96	3,929
Truck production (no.)	1,155	1,598	368	655
Bus. failures, 4-wk moving av. (no.)	19.0	22.3	22.5	17.5
Chartered Bank				
Personal savings ($ millions)	5,953	5,972	5,920	5,717
Loans outstanding ($ millions)	5,308	5,315	5,308	4,402
N.H.A. mtge. holdings ($ millions)	436	432	421	193
Bank of Canada holdings of				
Securities ($ millions)	2,411	2,384	2,357	2,342
Short-term govern. ($ millions)	1,046	1,018	999	1,144
Long-term govern. ($ millions)	1,336	1,338	1,327	1,139
Other securities ($ millions)	12	12	22	51
Canadian dollars (U.S. cents aver.)	102.393	102.347	102.008	101.01
T.S.E. industrial index	470.96	477.43	487.21	440.79
Yield, 114 stocks	4.66%	4.62%	4.46%	4.14%
Bank Clearings				
Montreal ($ millions)	734	645	635	582
Toronto ($ millions)	972	882	903	677

‡ 10-day end of month period.

Facts by the Month

	Latest Month Available	One Month Previous	Two Months Previous	One Year Previous
WHAT WE PRODUCE—				
In all industries (Index)	298.4	283.2	277.1	276.8
In factors (Index)	304.1	388.7	268.3	282.9
Total nondurable goods (Index)	261.1	245.0	244.0	248.7
Food & bev. (Index)	274.2	237.6	229.2	265.1
Textiles (Index)	193.0	175.9	189.1	190.6
Clothing (Index)	153.4	157.6	160.1	140.6
Chemical products (Index)	317.4	313.1	313.0	305.6
Total durable goods (Index)	371.4	357.1	352.4	354.1
Iron & steel products (Index)	335.8	332.7	327.1	296.2
Primary iron & steel (Index)	421.8	418.8	396.7	375.7
From mines (Index)	274.2	253.9	234.5	254.1
Metals (Index)	154.0	146.4	129.1	145.4
Nonferrous smelting, refining (Index)	285.4	261.3	239.7	254.8
Gold (Index)	109.2	106.3	106.8	107.7
—From farms				
Hogs graded (000)	523	456	494	407
Cattle delivered (000)	169	138	138	165
Flour (Index)	137.6	136.7	142.1	134.1
—From sea				
East Coast catch ($000)	8,189	8,549	7,771	7,714
W. Coast catch ($000)	8,893	3,163	1,670	5,070
—From forests				
▪Newsprint (000 tons)	570	532	536	540
Pulp (000 tons)	913	843	818	849
—In powerhouses				
Electricity (Index) (seasonally adjusted)	328.0	323.9	317.4	290.2
WHAT WE SELL—				
Retail sales ($ millions)	1,185	1,287	1,237	1,112
Dept. store sales ($ millions)	78.8	99.5	102.9	71.3
▪Wholesale sales ($ millions)	661	694	718	565
▪Mfrs. outstg. orders ($ millions)	2,712	2,732	2,815	2,587
Pass. car sales (units)	42,076	46,874	53,790	40,000
WHAT'S ON HAND				
▪Mfrs. inventories ($ millions)	4,525	4,517	4,455	4,070
▪Dept. store stock sales ratio	3.6	2.8	2.9	3.6
SPENDING, SAVING POWER—				
Labor income ($ millions)	1,216	1,169	1,126	1,090
▪Dividend payments (Index) (annual rate)	307.8	303.4	301.8	269.2
JOBS—				
▪Persons with jobs (000)	5,823	5,789	5,647	5,641
▪Jobless seeking work (000)	103	102	117	131
▪Do. (% of labor force)	1.7%	1.7%	2.0%	2.3%
CONSTRUCTION—				
Contract awards ($ millions)	300	302	321	260
FOREIGN TRADE—				
Exports ($ millions)	430	429	436	358
Imports ($ millions)	484	495	538	378
MONEY—				
Money supply ($ millions)	5,684	5,687	5,629	5,719
Cheques cashed ($ millions)	17,852	16,855	18,290	14,222
Life insurance sales ($ millions)	281	286	261	224
Notice deposits ($ millions)	6,340	6,329	6,299	6,184
Current public loans ($ millions)	5,298	5,288	5,183	4,193
PRICES—				
Consumer price (Index)	119.1	118.5	117.8	116.4

Index based: production wholesale sales 1935-39=100; consumer price index, 1949=100; manufacturers' inventories outstanding orders Dec., 1952—100.

STRATEGIC MATERIALS—Production and Supply—

	Latest Month	Month yr. ago	Yr. to date	% chge. yr. to date
Steel ingots and castings (000 tons)	442	361	3,058	+21.7%
Primary copper (000 tons)	26.7	27.5	174.6	+11.4%
Nickel (000 tons)	14.5	14.8	99.6	+1.3%
Cement (000 bbls.)	2,762	2,253	13,791	+21.4%
Lumber (millions fbm.)	658	674	3,026	—2.7%
Lumber exports (millions fbm.)	300	396	1,577	—13.4%

▪New item this week.

Date of issue for your file, The Financial Post Sept. 29, 1956.

$2 Million Issue Offer By Sheraton

MONTREAL (Staff)—An issue of $2 million 5½% series B general mortgage sinking fund bonds of **Sheraton Ltd.** is being offered by a syndicate headed by **Rene T. Leclerc Inc.** Price is $100 and accrued interest.

Proceeds of the issue will be used for general corporate purposes, and possibly for one or more new projects in company's field.

Company will establish a sinking fund for the exclusive benefit of the bonds being currently offered, and which commencing Oct. 1, 1957 will retire $100,000 principal amount of the bonds annually. It is calculated that the operation of this sinking fund will retire about 65% of the total amount of the issue before maturity. The bonds are redeemable, other than sinking fund purposes, in whole at any time by lot at a price ranging from $104 on or before Nov. 1, 1959 to 100.5 after Nov. 1, 1967.

The company, incorporated in early 1947 as **Cardy Corp.**, changed its name to Sheraton Ltd. in 1950 when it was acquired by **Sheraton Corp. of America.** It owns and operates four hotels: Sheraton-Mt. Royal, Montreal; King Edward, Toronto; Sheraton-Brock, Niagara Falls; Royal Connaught, Hamilton, Ont. They have a total of 2,453 rooms.

Company has spent more than $3.8 million on the repair, rehabilitation and improvements of the hotels since the change of control in 1950, and it is expected that additional sums will continue to be spent for such purposes during future years. Room occupancy in the four hotels has exceeded 78% on the average for the six fiscal years ended Apr. 30, 1956, and has been approximately the same for the four months ended Aug. 31, 1956, company says.

Company's Revenue

Company's gross revenue from hotel operations for the first three months of the 1956-57 fiscal year ended July 31, 1956 was $3,968,389 and net profit was $470,609. For the full year ended Apr. 30, 1956 gross revenues were $15,281,786, while net profit was $1,713,537.

Aside from the present issue, company's capitalization comprises $6.5 million 4¾% first mortgage bonds due 1967 of which $4,708,650 are outstanding; $4 million 5% series A general mortgage sinking fund bonds due 1970, all outstanding; 350,000 class A ($20 par) shares of which 236,072 are issued and 167,500 outstanding; 350,000 class B shares (n.p.v.) of which 300,000 are issued and outstanding. Over 99% of the outstanding Class A shares and all of the Class B shares of Sheraton Ltd. are owned by **Sheraton Hotels Ltd.**, a wholly owned subsidiary of Sheraton Corp. of America.

Maximum interest requirements on outstanding first mortgage bonds now amounts to $206,003 per year. Maximum interest requirements on the general mortgage sinking fund bonds series A presently outstanding amounts to $200,000 per year, while requirements for the current issue will amount to $110,000 per year. Interest requirements will decrease as bonds of all issues are retired.

GENERAL DYNAMICS CORP. between Sept. 11 and 19 issued an additional 52 shares upon conversion of debentures and 29,000 shares upon exercise of options. Now 5,105,680 common shares outstanding.

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Canada Proposes Changes To Strengthen IMF Role

(Continued from page 1)

time job as one of the deputy governors of the Bank of Canada, and an influential voice in the determination of Canadian policy particularly where international exchange arrangements are affected.

Influence On Policy

But the result of having so many directors concerned full-time with the I.M.F. is apt to be that they devote a lot of time to internal administration which the permanent international staff under the managing director could quite well look after. Often they have not sufficiently responsible positions in their own governments to be able to say much about national policy, or to influence their home governments.

True, they are constantly holding what they call "consultations" with various member countries about their exchange restrictions and balance of payments difficulties. But when it comes to any big decisions involving major currencies, like sterling or any of the Western European countries, the Fund's "consultations" are usually pretty formal. If any real discussion about exchange problems takes place at all, outside the original European sphere, it is directly between, say, the U. K. and U. S. treasuries. The I.M.F. can't do much more than rubber-stamp their decisions.

The Canadian suggestion is that the principal European countries, at least, should replace their permanent "executive directors" by really top-level officials from the home capitals, and that these men who have power to influence policy at the top should meet together only three or four times a year for genuine policy discussions.

The routine matters of the I.M.F., and any emergency decisions that had to be taken, could be left in the hands of officials at a lower level stationed here permanently.

Wants Senior Officials

The phrase Mr. Harris used to describe the kind of directors he wants was "senior officials of treasuries or central banks with operating responsibilities in their own countries."

He meant, of course, men with direct access to their ministers of finance, who could speak for their governments with authority, and who could in turn help to influence their governments' policies in the light of discussions at the fund.

This is the sort of representation the European countries have in the European Payments Union. There's nothing formal about its debates and arguments. It is a live, operating organization, compared with which the I.M.F. must seem remote and impractical.

The I.M.F. has its book of rules, laid down in the articles of agreement prepared at the Bretton Woods conference just over ten years ago. It is always against sin, whether the sin takes the form of inconvertible currency, or exchange restrictions or bilateral deals, or — striking nearer home — fluctuating exchange rates.

But equally regularly it gives its blessing to particular acts of sin with mild admonitions which amount to saying: "It's all right this time, but you must stop beating your wife as soon as she starts behaving."

Canada's Position

Even the I.M.F. acceptance of Canada's free exchange rate is of this form. Each year it goes on describing the fluctuating dollar as "temporary." Probably all the members know that Canada has no intention of returning to a fixed rate. Most of them probably agree that we are fulfilling the spirit of the I.M.F. better than most people. But the rules still say every currency must be pegged to a stated par value. So according to the book Canada is living in sin in its particular way, while most of the other members go on beating their wives with the fund's regretful approval.

The only way to improve this situation, as Canada sees it, is for the fund to pay more attention to making the wives behave so that they don't need beating any more.

In other words, it's the domestic financial and economic policies which result in balance of payments troubles that have to be tackled. Once a country has got itself into the sort of jam where it can't balance its accounts with the world, it must resort to the sort of restrictions which hurt other countries. And by that time the need is so urgent that neither the fund nor anybody else can gainsay it.

The only effective way to avoid this is to give other countries, through the I.M.F., a chance to get in their say at a much earlier stage in the game when a balance of payments crisis can still be avoided.

This is really what Mr. Harris's innocent-looking proposal is aiming at. Canada would like to build up the I.M.F. as a forum where the real policy-makers of national governments can influence each other's monetary and financial policies long before crises arise. It would also like to build up the influence of the managing director of the Fund, with the idea that he might become the sort of person national governments would want to go to for advice and help.

If the job were conceived in that way, it is believed, the range of candidates for it would be greater than it proved to be this year. Ivor Rooth, who has just finished his five-year term, is retiring. He will be succeeded by Per Jacobsen, a Swede who has been for the last 25 years with the Bank of International Settlements at Basle. He has actually been in international jobs since the First World War, because he had a hand in organizing the very first financial and economic work of the League of Nations. It was in that work that he first met his wife, who is a sister of Sir Archibald Nye, retiring U. K. High Commissioner to Canada.

Neither Mr. Harris nor any other delegate here supposes that the new Canadian proposal will lead to any quick or important change in the influence of the I.M.F. but it is hoped that it will help to put some more life into the organization, which is the only fully international body through which countries like Canada can hope to influence the monetary policies of their trading partners. We have so much to lose, tradewise, by currency restrictions and exchange difficulties that the Government feels we have a vital interest in bringing these things into the wider international setting of I.M.F. instead of letting them rest in regional bodies like the E.P.U. where we have no voice.

Canada Holds High Hand In World Oil Supply Poker

(Continued from page 1)

10 years, the potential need for oil pipelines becomes astronomical if Canada and the U. S. are to be removed from the danger of a loss of Middle East supplies and if they are to help supply Western Europe's oil needs.

The expected rush for Canadian oil will also mean:

—Greater importance of natural gas as a vital energy resource and increased use by industry and the public.

—A boom in demand for drilling pipe, drilling rigs and other exploration and dev[illegible] equipment that will benefit pipe-makers, steel companies and the vast part of Canadian industry that supplies oil industry needs.

—Further impetus to Canada's petro-chemical industry. More oil and gas finds will mean more petroleum byproducts to be processed into chemicals.

Any major immediate disruption in the Middle East is not expected to have a major short-term effect on the Canadian oil industry. Pipelines couldn't handle the demand without undertaking expansion although it is believed a few major fields could easily supply the necesary oil. Pembina, Leduc and Redwater in Alberta could fill any immediate gap, thus largely benefiting only the major producers of oil who operate these fields.

Smaller companies in which share speculation has been heavy would be largely by-passed. But these smaller companies, sitting on undeveloped lands could win by welcoming major world firms as partners in exploring their untapped holdings.

The mushrooming effect on the Canadian economy resulting from Leduc No. 1 found in 1947 will be emphasized and accelerated by the efforts of every major world oil concern that will be operating in Canada in the future.

Nasser may appear to win his poker hand but Canada will cash in the oil chips.

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Canadair Strong Contender For RCAF Jet Trainer Job

(Continued from page 1)

to replace the time-worn North Stars of Air Transport Command.

These known projects, added to secret guided missile work and existing production of Sabres and T33 jet trainers for the RCAF, promise a full year.

The possibility of a jet trainer contract for the RCAF is like a cherry sitting on top of a super-decorated sundae.

The RCAF wants a new jet trainer for its own use and for its hefty NATO scheme. This plane must be fast enough to teach the new pilot what he can expect later, and at the same time gentle enough for the beginner.

RCAF teams have been trying out a number of British, U. S. and French designs.

The Provost is an impressive plane with a good record, in large scale use with the RAF.

It has been shown that, by cutting out a period of piston engine training followed by jet conversion, the pilot training course can be cut to 56 weeks, a saving of 20 weeks.

Canadair officials this week were not anxious to comment on the Provost trainer contract chances.

Reason: The company is negotiating with the RCAF for an order for a Canadair-designed jet trainer in that class.

Details of the new plane are not yet known but, The Financial Post learned, the design is still flexible enough to include any special RCAF requirements.

Should Ottawa decide on the home design, Canadair will have to work fast to design, test and build their own plane quickly enough to be a reasonably competitive proposition.

'57 Car Parade on Soon; Bodies Lower, Prices Up

(Continued from page 1)

verge of becoming general among all Canadian automakers.

Prerequisites of retail sale to the car-conscious public are dealer previews—which have begun—and an inventory buildup.

Here is what rumor and informed opinion has been saying about how the new cars will look:

American Motors

Rambler: Not much change from last year's greatly altered car, which sold well in Canada. More power; Rambler no longer to be tagged with Nash or Hudson names.

Nash, Hudson: Few great changes expected, though dual headlights rumored for Nash. Rear fenders to flare outward. Both expected to change to air suspension system later in production year.

Chrysler

Chrysler: Lower and wider, bigger windshields. Torsion bar suspension expected on front end, in common with other Chrysler Corp. products.

DeSoto: Markedly recessed headlights; big grille, door handles flush with sides and prominently finned rear fenders.

Dodge: rear fender fins tipped outward; new grille with toothed appearance; large lamp next to each headlight containing parking lights, turn indicators.

Imperial: Aluminum roof, curved windows rumored; very large windshield; U. S. production line to turn out convertibles.

Plymouth: Aluminum grille, much larger windshield; wider, longer, lower; step-down interiors expected; more emphasis for low-front-high-rear treatment which Chrysler products have pioneered.

Ford

Ford: Lower and longer. It has already been announced in the U. S. that Ford will offer two completely different body sizes for the first time. Rear fins to be more pointed and stylized, flaring outward; altered fender design.

Mercury: Lower, wider, longer; push-button transmission; big tail-lights, twin rear bumpers; possibly visors on rear windows, indentations along fenders.

Lincoln: Sweeping changes not likely. It got eye-catching new treatment a year ago. Restyled grille, dual headlights, new differential likely.

Continental: This is a prestige car, to be left unchanged for a number of years as a matter of deliberate policy. No changes this year.

Meteor, Monarch: These are Canadian variations of Ford and Mercury.

General Motors

Buick: Lower, though still square-shaped, hood; all four-door sedans to be hardtops; two chrome strips along top of car; forward-slanting rear window-pillars; greatly altered portholes.

Cadillac: The pacemaker among expensive cars also will tend to be lower. At least one model is expected to be longer. A feature: Automatic headlight-dimmer.

Chevrolet: Oval-shaped aluminum grille with heavy bumper; simulated air scoops in hood; new, low tail-lights, modified rear fender fins.

Oldsmobile: Expected to offer a station-wagon. The car will have new grille treatment, new tail-lights. Possibly: An Olds sports-type car with glass insert in roof and sloping hood.

Pontiac: Lower, with new, improved automatic transmission; higher rear fenders, altered tail-light assemblies.

Studebaker-Packard

Studebaker: After big change to boxy Detroit-type styling a year ago, further big alterations unlikely for 57s. Bigger tail-lights and bumpers. Supercharger for Golden Hawk sports car.

Packard: After much indecision, there will be a 1957 Packard. Extent of changes isn't known.

Good First Quarter Says Steel Demand

(Continued from page 1)

which has prevailed in U.S. since the steel strike has been an important factor in the supply picture in this country. Even the scattered offerings of cold rolled sheets made prior to the strike have now dried up. A big factor in the over-all steel picture across the border—considerably less a factor here—will be the public acceptance of the new 1957 auto models.

Architects Plan Banff Sessions

The first annual architectural design conference Session '56 sponsored by the Alberta Association of Architects proved so successful that a second conference is now being planned.

Continuing theme of Session '57 will be "An exploration of contemporary architectural approaches and ideals." The session will again be held at the Banff School of Fine Arts in the Canadian Rockies, Jan. 20-26, 1957.

Arrangements are in charge of The Alberta Association of Architects, 312 Northern Hardware Building, Edmonton.

$25 Million Contract Let

Canadian Bechtel Ltd., Toronto, has been awarded a contract to build **Imperial Oil's** recently-announced $25 million petrochemical plant at Sarnia.

Construction is expected to get under way next spring with completion scheduled for spring of 1958. The plant will be on a 50-acre site adjacent to the company's Sarnia refinery. The new plant will convert materials received from the refinery into such basic chemicals as ethylene, propylene, normal butylenes, isobutylenes, butadiene, aromatic distillates and tars.

Look For It Here

September 29, 1956

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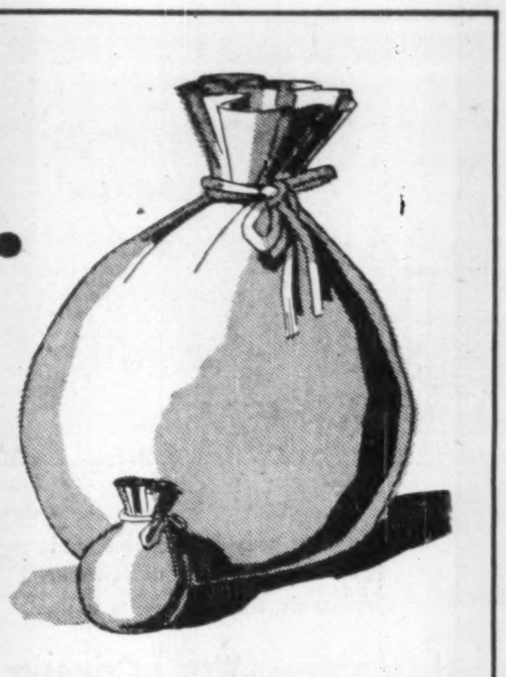

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You may have accumulated a large fortune or only a modest sum—but whatever its size, your estate deserves careful planning so that your dependants will receive the maximum protection and security from the accumulation of your life's work. In fact the smaller the estate—greater is the need of thoughtful consideration of its potentialities, because it has got a bigger job to do. A capable, dependable executor will carry out your plans efficiently and economically.

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Expect TCP Financing First Week in November

(Continued from page 1)

lative adverse effect on the whole investment picture. So far the main market effects have been to keep potential investors on the sidelines.

But a few more days of sinking markets could produce some wholesale dumping of stocks. The credit stringency plus the continuing uncertainty over Suez hardly produces the proper investment atmosphere for such large offerings as that planned by Trans-Canada.

Although Trans-Canada officials and underwriters are keeping mum about details, it is known that the offering will follow the pattern of previous pipeline financing in U. S. and Canada. Some 62% of issue will likely consist of debt (first mortgage and debentures), the rest in equity financing.

One feature of the offering is expected to be the offer of units to the public consisting of a debenture with several common shares attached in a "package" deal.

On the actual construction front itself, two new work spreads have now been added (now four in all) to handle the increased flow of pipe arriving almost daily from U. S. pipe mills.

Some 125 miles of the 574-mile Alberta-to-Winnipeg section of the line has now been laid. Because of the 11-week break in pipe shipments due to the U. S. steel strike, scheduled deliveries will not be completed now until sometime in early February.

Because of weather limitations, this makes completion this year of the line to Winnipeg virtually impossible.

There is one outside chance, however, of getting more pipe. That is if one or more of the U. S. pipe customers who have contracted for pipe deliveries from the same mills serving Trans-Canada now decide to cancel their orders because of lateness of the current construction season.

In such a case Trans-Canada, which has been pressing vigorously for stepped-up deliveries, will stand a good chance of getting a good chunk of the canceled pipe order.

Failure to get to Winnipeg this year will have no major adverse effect on the over-all Trans-Canada project, pipeline officials claim. The all-important targets are these: (1) To be able to complete major financing based on Canadian gas sales alone in time to repay the $80 million federal loan by April 1.

(2) To assure an early 1957 start on the tough Manitoba-to-Ontario section of the line and completion to Toronto by early 1958.

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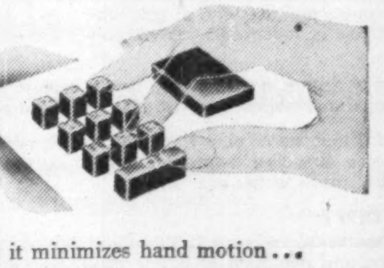

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Why They're Moving

Facts and comment on what's going on in the market and rumors behind some of the moves.

By FRANK KAPLAN

A gradual deterioration in prices of industrial stocks set in about six weeks ago and since then levels have dipped about 6% as measured by the popular index indicators. Throughout the decline, there has been little evidence of any selling rush. Sporadic sharp slumps did occur but the market was quick to resume listless dealings at steadily lower prices. Major factors said behind this slide are:

—Tight money policies which have meant a re-assessment of the value of an investment.

—Suez and attendant uncertainty over world political conditions.

—The U. S. elections and uncertainty over the future of the North American economy.

—The summer advance from which a profit-taking setback is to be expected.

Here is a table showing how some of the leaders have moved through this declining phase.

	Latest Price $	Sept. 14 $	Aug. 10 $	1956 High $	1956 Low $
Abitibi	35	36	41	43¼	34¾
Aluminium	122¼	134	141⅜	147½	100
Bell Telephone	46	46¾	48½	51¾	45¼
Cdn. Breweries	26¼	27⅛	28½	33½	25
C.P.R.	32½	33¾	34¾	36½	30⅝
Dist. Seagrams	33½	33¼	36½	39½	33
Ford A	122	124½	127	137½	110
Imperial Oil	58	58	60	62½	36⅞
International Nickel	101⅛	104	107¾	110	78¼
Massey-Harris-Ferguson	7	7⅛	7¾	9⅝	6⅞
Powell River	45¼	46¾	53	62¼	44½
Steel of Canada	66	66	72½	88	57¼
Royal Bank	65¾	65¾	64¼	68	56¼

* * * *

THE STREET IS TALKING ABOUT—a new burst of interest in pipeline stocks. With troubles in Suez still pointing to more demand for Canadian oil, investors are looking at pipelines as among the most rapid beneficiaries of this trend, predicting major expansions in pipeline capacities.

Trans Mountain Oil Pipe Line continues its rebound from a sharp slump in trading at $78 before slipping to $76, up from a low of $73¾ last week . . . **Interprovincial** gains $1¼ at $43¾ from $42½ . . . **Pembina** at $42½ is up from $41¼. . . Similarly, strength in **Page Hersey Tubes** is attributed to need for more pipe. Stock rises to $96 from $91¾.

* * * *

Recent sharp drops in **Aluminium** from $134 to $122¼ are attributed partially to talk of a secondary offering of stock (possibly 150,000 shares) by large U. S. holders.

George Weston shares turn easier with company announcing financing through sale of sinking fund debentures carrying stock purchase warrants to buy class A shares. The A shares at $19¼ are down from $21½ and the B shares slip $1½ at $20. First seven months' earnings indicate increased net for full year.

Canadian Hydrocarbons which buys three propane firms from **International Utilities** firms mildly to $10 from $9¾, then slips to $9⅝ as whole market slides. **International Utilities** an irregular trader in line with Wall Street at $49⅞, compared with $50½ a week ago.

* * * *

Reflecting booming construction business and greater use of credit in home renovating, **Interprovincial Building Credits** has a 42% rise in net profit in first half of 1956. Stock at $14½ is little changed from $14⅛ with company selling stock to U. K. interests and planning rights offering to shareholders.

Shares of other finance companies gaining on market. **Industrial Acceptance** at $29¼ after 2-for-1 split is up from $57⅜ pre-split and **Traders Finance A** edges ahead to $47⅞ from $47¼. . . **Consumers' Gas** still attracting investors with rise to $27¼ from $25. On other hand, some profit-taking appears in **Union Gas** which slips back to $55 from $61½.

* * * *

OTHER MARKETS — Morrison Brass which was suspended from Toronto Stock Exchange list last week tumbles sharply in over-the-counter trade to $2¼-$3 with the bid price not particularly firm. When suspended, Morrison was trading at about $6 then slipped to $5 over-the-counter, a week ago. Still no further word from TSE or the company on reasons or what's ahead.

Mild overseas interest appears in **Inland Natural Gas** which jumps $1 to $8¼ in a single session. Otherwise foreign buyers staying out of Canadian issues.

MANAGED INVESTMENT

Compton Account Value Drops To $37,500

As a result of the general market slump of recent weeks, the total value of Compton's account dropped by approximately $2,000 to $37,500 at September 14, but was still $1,000 above the mid-June figure.

Compton's annual income has increased by $9 to $1,477, due to **Industrial Acceptance Corp.'s** increase in its quarterly dividend rate to 70c from 62½c per share. The higher dividend is payable September 28 to shareholders of record September 4.

Compton's Manager Says:

Beset by the threat of an open break with Egypt; by the strange unreality which beclouds political discussion south of the border during a presidential election campaign; and by the still unclarified business outlook for 1957; all stock markets declined appreciably during the month ended September 14.

Because virtually since the beginning of 1956, Canadian equities in general had risen appreciably faster than equities in the U. S., this time the decline was also greater on our stock exchanges, than in New York and elsewhere in the U. S.

For example, the DBS index of industrials (which it is perhaps reasonable to compare with the Dow-Jones index of industrials) declined by no less than 6.3% between August 9 and September 13 — the latest weekly figure available at the time of writing. In the same period, the Dow-Jones index of industrials declined only by 3.7%.

The Compton account, which includes several interlisted stocks, declined by 5% — a figure just half-way between the decline in the DBS average and the decline in the Dow-Jones average.

Between August 15 this year and September 14, Compton's account shrank in market value by $1,962. But is still was worth $1,000 more on September 14, than on June 15.

Once again, Compton's annual rate of income increased. The larger dividend now being paid by Industrial Acceptance will bring him an additional $9 per annum.

It is now 12 months since President Eisenhower suffered his unfortunate thrombosis (on September 24, 1955). On three successive Mondays thereafter, investors panicked and the market dropped sharply. But panic is generally penalized. If those who sold then had held their securities for a few months longer, they could have got much better prices for them.

Five months after the drop, the market recovered fully — rose indeed above the previous high point, reached just before the President was stricken.

During March and April of this year, the market never closed below the pre-thrombosis level of September, 1955. In each month since April, the closing price has often been higher than that.

During the month, Compton received in dividends $194. After his regular quarterly deductions of $250 for personal expenses and $40 for management fees, his cash balance stood at $60.

Compton's Account Now Stands:

No. of Shares		Cost per Share $	Mkt. per Share $
	Common Stocks		
75	Abitibi	12.86	36.00
35	Aluminium Ltd.	49.77	134.00
50	Canada Cement	33.81	32.00
35	Dominion Stores	40.76	39.50
30	Indust. Accept.	51.94	57.375
50	Powell River	24.51	46.75
35	Shawinigan	70.45	85.00
15	Hiram W.-G.&W.	47.74	72.25
	Base Metal Stocks		
100	Hudson Bay Mng.	60.67	85.00
100	Internat. Nickel	49.32	104.00

SUMMARY

	Book Value $	Mkt. Value Sept. 14 $	Prosp. Ann. Inc. $
Common stocks	11,788	18,490	602
Base metal stocks	11,000	18,900	875
Cash	60	60	....
	22,848	37,450	1,477

Current market value of fund	**$37,449.86**
Prospective annual income	**1,477.25**
Average yield on original $10,000	**14.77%**
Average yld. on curr. mkt. val.	**3.94%**

114 Stocks Yield Averages 4.66%

The average yield on 114 dividend-paying stocks on the Toronto Stock Exchange, as compiled by Moss, Lawson & Co., on prices of Sept. 24, was 4.66%, up .04% from the previous week. The current yield compares with 4.46% one month ago and 4.14% in the corresponding week last year.

Here is the yield by the various groups:

	Sept. 24 %	Week Ago %	Month Ago %	Year Ago %
Common	4.11	4.10	3.95	3.89
Pfd. & A	4.83	4.79	4.66	4.12
Mining	6.24	6.10	5.92	4.29
Banks	3.13	3.12	3.06	2.86

Note

by Vincent Egan

If you've earmarked some funds for investment in new issues, you will have plenty of choice soon — providing the stock and bond markets improve.

Don't be deceived by the slight slowdown in offering of new issues in recent weeks. This has been an extremely busy year for the underwriting departments of Canada's major investment houses. Preliminary figures show that new corporation bond issues alone by the end of this month will have totaled $688 million, up 56% over last year's $440 million January-September total.

So many new issues have been and are being prepared that it now takes three days longer than normal for a draft prospectus to be cleared by the Ontario Securities Commission, dealers say. Submission of a prospectus to the securities commissioners is the final step before public offering of a new issue.

But the investment underwriters are as uncertain as the rest of us concerning the near-term outlook for the stock and bond market. A new issue of stock or of convertible senior securities, for instance, stands a much better chance of success — and will command a better price — when the stock market is rising than when it is not so strong.

That's why there's a growing number of new issues close but still not offered. As soon as the market appears healthy enough, they will be forthcoming in large numbers.

If, on the other hand, the market doesn't improve, at least some of the new issues will have to be offered to the public regardless of timing. When a corporation needs new money to expand, it can't wait indefinitely.

* * *

The market action of some recent issues, such as **Shawinigan Water & Power, Abitibi, and Loblaw's,** indicates the current mood of the market.

All three issues offer attractive conversion features. All three offer generous interest rates, and a history of solid growth in earnings.

At almost any time during the past three years, such issues would probably have been selling at a premium for some time after the offering, but early this week all three of them were selling below their original offering price, par:

	—Sept. 25— Price $	Yield %
Loblaw Groceterias, 4¾% conv. debs., due 1976	99½	4.78
Abitibi, 4½% conv. debs., due 1966	99	4.62
Shawinigan W. & P., 1st mtge. & coll. trust 4¾% bonds, due 1976	98	4.90

When blue-chips such as these sell under par almost immediately after issue, and when cash can earn 4% when put out on call, consider the plight of the less well known corporations and municipalities who are trying to borrow at a price they can afford.

* * *

Rumors of a public offering of stock of **A. V. Roe Canada Ltd.** have been circulating for over a year. Now, with the arrival in Canada of the chairman and managing director of Avro's U. K. parent, the **Hawker Siddeley Group,** the issue is on the point of being made. Only a serious drop in the stock market within the next few days, it appears, could alter the financing plans.

A nation-wide syndicate headed by **Wood, Gundy & Co.** will handle the issue (expected to be about $10 million in common stock) of the aircraft company. Control will remain in the hands of Hawker Siddeley, which will still hold about 80% of the outstanding shares of Avro compared with virtually all the stock now. The stock offered will consist of treasury shares, made possible through an increase in Avro's authorized capitalization.

The A. V. Roe Canada Group, founded in 1945, now includes **Avro Aircraft Ltd.** (integrated aircraft design and manufacture), **Orenda Engines Ltd.** (design, development and manufacture of aircraft engines), **Canadian Steel Improvement Ltd.** (forgings and castings of light metals), **Canadian Car & Foundry Ltd.** (manufacture of rolling stock, trolley buses and aircraft), and **Canadian Steel Foundries (1956) Ltd.** (producer of steel castings for heavy industry).

* * *

Capital needs of the **Canadian Pacific Railway** over the next 15 years will exceed $1.3 billion, estimates President N. R. Crump. He suggests that about $800 million might come from depreciation accruals, $500 million from other sources.

* * *

The hotel chain **Sheraton Ltd.,** is offering $2 million 5½% general mortgage bonds, due 1970, at par. A $6 million offering of **Anglo-Canadian Telephone** 5% 20-year debentures is expected.

In the municipal field, $3 million issue of Montreal Protestant School Board 5% 20-year debentures has been offered to yield 5¼%. Price was 99.10, to yield 4.85%, on this week's $5.4 million issue of City of Hamilton 4¾% 1-20 year debentures.

* * *

Supplementary letters patent have been granted to **Somerville Ltd.,** a London, Ont., producer of lithographed and printed packaging materials, altering its authorized capitalization to allow more than one series of preferred shares, and to allow the issue of 500,000 no par value common shares.

At present, there are 40,000 par $50 preferred shares outstanding (of an authorized 100,000), all designated as $2.80 series; and 3,563 of an authorized 5,000 common shares, par $100. Garfield Weston holds all common stock except the qualifying shares.

A company official said that no public financing is contemplated.

* * *

Doing business with Japan?

If so, you'll find fewer headaches in foreign exchange clearings now. Her economy bolstered by a constantly improving trade balance and mounting reserves of foreign exchange, Japan has this month permitted its banks to fix the spot yen exchange rates for the Canadian dollar and Swiss franc within a wider range than before.

Arbitrated values of the two currencies are fixed by the Ministry of Finance on the basis of their current rates in the New York and Zurich exchange markets. The ministry has now wiped out the complicated procedures for fixing customer rates, and is allowing the banks to set their own rate within 1% of the arbitrated value.

At September 10, arbitrated rate for the Canadian dollar was 368.10 yen. Banks were therefore free to negotiate exchange rates between 364.42 and 371.78 yen to the dollar.

Next question: How soon will Japan (Canada's fourth biggest customer) set the yen free, making it fully convertible?

Dividend Changes

NORTHERN CANADIAN MORTGAGE CO. LTD.—6% pref., 50c payable October 1 to holders of record Sept. 20, ex-dividend Sept. 18. Total paid, in 1956 to date, $4.50; in 1955 to same date, $4.75; total paid in 1955, $4.75. Arrears at October 15, 1956, $8.82½. Last price: $60.

SUPERVISED AMERICAN FUND—Unit, 5c payable September 28 to unitholders of record Sept. 19. Total paid, in 1956 to date, 13c; in 1955 to same date, 17c plus distribution of 1-for-10; total paid in 1955, 21c plus distribution of 1-for-10. Recent price: $6.10 bid, $6.16 asked.

SUPERVISED INCOME FUND—Unit, 5c payable September 28 to unitholders of record Sept. 19. Total paid, in 1956 to date, 14c; in 1955 to same date, 15c plus distribution of 1-for-10; total paid in 1955, 22c plus distribution of 1-for-10. Recent price $4.33 bid, $4.37 asked.

BATHURST POWER & PAPER CO. LTD.—Common B, 25c payable December 1 to holders of record November 5, ex-dividend Nov. 1. Total paid, in 1956 to date, $1.50; in 1955 to same date, $1.00; total paid in 1955, $1.00. Recent price: $41.

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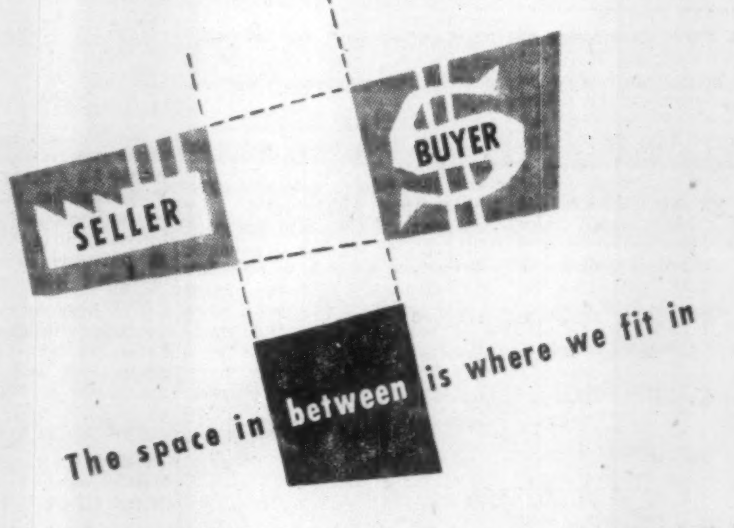

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KEEPING POSTED

By PAUL S. DEACON

How's Your Company Doing?

More Firms Keeping Investors Happy By Interim Reports

"When you care enough to send the very best," you send a greeting card made by a well-known greeting card manufacturer. At least, that's what the card maker's slogan says.

Listed on this page are the names of about 100 Canadian companies whose management cared enough about their shareholders to send them the kind of greeting they like best and need most—frequent news about how their company is doing. All the firms listed now send their owners interim financial reports.

Comparing interim reports with greeting cards may seem far-fetched. A mid-year report on earnings per share and working capital hasn't much glamour, but for the investor, it's a sign that management is concerned with his welfare and is keeping him informed of the firm's health and progress.

Unfortunately, this type of greeting is still ignored by some companies. But more and more firms are coming to recognize their responsibility — keeping shareholders regularly informed, not just through annual reports, but also through reports during the year.

In the U. S., quarterly reports to shareholders are widely accepted. Firms must agree to make such reports as a condition for listing on the New York Stock Exchange.

Practice Growing

The practice is growing here too, particularly in the past two or three years. Most of the leading companies have now incorporated either semiannual or quarterly reports in their corporate agendas.

But bigness isn't necessary when it comes to making interim reports. The list of companies on this page includes firms with relatively small sales and few products.

Some large firms claim they don't make interim reports because they don't want their competitors to know how they're doing. But their statements are usually less easily analysed by competitors than those of the small firms which do report frequently. And the small firms have been coping with competitors quite successfully, despite their habit of keeping shareholders informed regularly.

Variation in Method

There is a great deal of variation in the method firms choose when they report.

For instance, **Distillers Corp.-Seagrams**, which publishes a lavish annual report each year, issues a quarterly report listing two-year comparative figures for three items: income before income taxes, income taxes, and net profit.

Another firm in the beverage industry, **Canadian Breweries,** provides comparative quarterly figures not only for income account items but also for its balance sheet. It also includes comment on company affairs.

Several firms issue general notes on trends in operations without giving financial details. **Steel Co. of Canada** follows this policy. But this is not as useful as actual financial information. **British American Oil** used to do this too, but now issues a semi-annual financial report as well. Undoubtedly its shareholders look forward to the day when, like the other major oil firms such as **McColl-Frontenac** and **Imperial,** it puts its financial reports on a quarterly basis too.

An Early Peek

Some firms provide very helpful interim news in other ways. Some, for instance, publish an estimate of full year earnings right at the year end — two or three months before the final figures are available. The figures are just estimates—and are labeled that—but they are of great interest to all shareholders. Not only does this give them a good idea of how the year has gone, but once again it makes them realize that management is anxious to keep them up to date on company affairs.

George Weston Ltd. and the two Canadian **Loblaw** firms made use of figures they had to prepare for use in public financing to give shareholders an early peek at how their operations were going. It's to be hoped these firms will make interim reporting a permanent part of their regular shareholder information program.

Interim reports need not be major productions, so far as most shareholders are concerned. A mimeographed sheet with the relevant facts and comment would be sufficient if companies are worrying about the cost involved.

There appear to be few good reasons for not making interim reports. Even one of the chartered banks put out a semi-annual financial report this year, in connection with a stock offering.

There are a great many sound reasons why companies should report often, preferably quarterly. Now that the 100 mark has been passed, investors hope succeeding hundreds will be reached quickly.

HONOR LIST

Abitibi P. & P.	S
Aluminium Ltd.	Q
American Nepheline	Q
Anglo-Cdn. Telephone	Q
Argus Corp.	S
Atlas Steels	Q
Aunor Gold Mines	Q
Balanced Mutual of Canada	Q
Barnat Mines	Q
Bathurst P. & P.	Q
Bell Telephone	Q
Bralorne Mines	Q
B.A. Oil	S
B. C. Forest Products	S
B. C. Telephone	S
Broulan Reef Mines	S
Calgary & Edmonton	S
Calgary Power	Q
Campbell Chibougamau	S
Campbell Red Lake	Q
Combined Enterprises	S
Commonwealth International	Q
Consol. Paper	Q
H. Corby Distillery	Q
Craig Bit Co.	Q
Can. Wire & Cable	S
Cdn. Breweries	Q
Cdn. Chem. & Cellulose	S
Cdn. Food Products	S
Cdn. Gen. Investments	S
Cdn. Hydrocarbons	S
Cdn. Investment Fund	Q
Cdn. Industries Ltd.	S
Cdn. Pacific Rlwy.	S, M
Distillers Corp.-Seagrams	Q
Dome Mines	Q
Dom. Stores	S
Donohue Bros.	Q
Du Pont of Can. Secs.	S
East Malartic Mines	Q
Falconbridge Nickel	S
Famous Players	S
Ford Motor of Can.	S
Fraser Cos.	Q
Gatineau Power	Q
Giant Yellowknife Gold Mines	Q
Granby Cons. Mining	Q
Great Lakes Paper	Q
Gypsum, Lime	Q
Hallnor Mines	S
H. B. Mining & Smelting	Q
Imperial Oil	Q
Industrial Acceptance	S
International Nickel	Q
International Petroleum	Q
International Utilities	Q
Interprovincial Pipe Line	S
Investors Mutual of Canada	Q
Kerr-Addison	Q
La Luz Mines	S
Lower St. Lawrence Power	Q
Mutual Accumulating Fund	Q
Macassa Mines	Q
MacMillan & Bloedel	Q
Merrill Petroleums	Q
Molson's Brewery	S
Monarch Knitting	S
McColl-Frontenac Oil	Q
McIntyre Porcupine	Q
New Calumet Mines	Q
New Dickenson Mines	Q
Noranda Mines	Q
Normetal Mining	S
North Star Oil	Q
Opemiska Copper Mines	Q
Pamour Porcupine Mines	S
Pioneer Gold	Q
Powell River	S
Quebec Power	Q
Quebec Telephone	Q
Quemont Mining	Q
Riverside Silk Mills	Q
Saguenay Power	Q
St. Lawrence Corp.	Q
Shawinigan W. & P.	Q
Sherritt Gordon Mines	Q
Sigma Mines (Quebec)	S
Silver-Miller Mines	S
Silver Standard Mines	S
Silverwood Dairies	Q
Southam Co.	Q
Southern Can. Power	M
D. A. Stuart Oil	Q
Supervised Investment Fund	Q
Switson Industries	Q
Third Cdn. Gen. Investment	S
Torbrit Silver Mines	S
Traders Finance	S
Trans Mountain Oil Pipe Line	S
Union Acceptance	S
United Steel	S
Waite Amulet Mines	Q
H. Walker-G. & W.	Q
Waterous Equipment	Q
Westeel Products	S
Zeller's	S

M—Monthly. Q—Quarterly. S—Semi-annual.

MANAGED INVESTMENT

MacNab Account Stocks Fall In Market Dip

With the general decline in the stock market of the last few weeks, the total value of McNab's account dropped to $38,100 at Sept. 14 from a record $39,700 at mid-August.

MacNab's manager recently bought an additional five shares of **Consolidated Mining & Smelting Co. of Canada** at $31 each for his client (FP Sept. 8). Here is a brief comment on the company which he has forwarded.

MacNab's Manager Says:

W. H. Aldridge, first managing director of Consolidated Smelters, addressed the shareholders when the company was formed in 1906 as follows: "Consolidated Mining & Smelting Co. is not dependent on a single mining district, but its interests and business, besides being to an extent industrial, will also be so diversified as to minimize, so far as possible, the speculative element."

Since then Smelters has become a major lead, zinc and silver producer. It also produces large quantities of gold, cadmium, bismuth, antimonial lead, tin and indium. Chemical fertilizer production has now become a major industry.

At the end of 1955 Smelters had 7,980 employees. Total sales for the year amounted to $150.1 million ($124.3 million in previous year.) Net profit was $33.4 million ($25 million), equal to $2.04 ($1.53) per common shares, and dividends amounted to $1.75 ($1.35) per share.

At the price at which the five shares were purchased ($31), the yield is 5.65%.

Investment income in the month ended Sept. 14 amounted to $85. After the usual monthly withdrawal of $40, the additional quarterly withdrawal of $5 to cover safekeeping charges, management fees, etc., and the expenses for the purchase of additional Smelters' stock, there was a cash balance of $183.

MacNab's Account Now Stands:

No. of Shares		Cost per Share $	Mkt. per Share $
	Common Stocks		
40	Abitibi	25	36½
60	B. C. Telephone, ord.	34½	50
50	Calgary Power	60	66
100	CPR	23.85	34
50	Cons. Mng. & Smltg.	31	31¼
50	Distillers Corp.-Seag.	30.85	33¼
50	International Utilities	21½	50
20	Noranda Mines	34.44	62
50	Powell River	26⅝	48½
40	Howard Smith	21¾	44½
30	Hiram Walker-G. & W.	52½	72½
50	Sicks Breweries	28½	24½
30	Dom. Fdries & Steel	25	31¾
50	Montreal Locomotive	17¼	16½
30	B. C. Power	33½	46¼
30	B. A. Oil	38¾	46
20	Bank of Montreal	50	54¾
	Preferred Stocks		
50	Acadia Atl. Sugar, A	17¾	21¼
30	Aluminum Co. of Can. 4½% 2nd pfd.	31¼	48
	Convertible Corporate Bonds		
$1,000	CPR 3½%/66	100	104½
$1,000	Dom. Steel & C. 4%/66	100	107
	Net value		$37,872.50
	Cash		$183.39
	Total value		$38,055.89
	Original amount invested		$10,000.00
	Capital gain		$28,055.89
	% Capital gain		280.56
	Annual income		$ 1,479.25
	% Yield on original investment		14.79
	% Yield on market value		3.91

$10 Million Weston Issue Is Offered

A new $10 million debenture issue of **George Weston Ltd.** (FP, Sept. 22) is being offered at par by a syndicate headed by **Wood, Gundy & Co.** and **McLeod, Young, Weir & Co.,** both of Toronto.

Issue consists of 4¾% Series B sinking fund debentures maturing Oct. 15, 1971, and carrying warrants to purchase Class A shares.

Proceeds will be used initially to repay outstanding short-term debt, which will improve working capital position and enable company to continue its expansion and development.

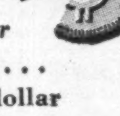
Each $1,000 debenture carries stock purchase warrants entitling holders to buy 30 Class A shares at $22.50 each to Oct. 15, 1960; at $25 each to Oct. 15 1963; and at $27 each to Oct. 15, 1966. Stock has been trading recently around $19.50.

Interest requirements on outstanding funded debt, upon completion of present financing, will be $798,000 per annum. In the year ended Dec. 31, 1955 profit from operations available for interest requirements (after depreciation but before taxes) was $6.6 million.

Capitalization on completion of present financing will consist of $6.8 million 4¾% 15-year sinking fund debentures, due Jan. 15, 1968; the $10 million new debentures due 1971; 116,490 4½% cumulative redeemable preferred shares, $100 par; 1,371,792 Class A shares, no par; and 1,371,792 Class B shares, no par.

Inflation

has cut 12% from the value of your dollar since 1950 . . .



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New Issue

THE SHAWINIGAN WATER AND POWER COMPANY

4¾% First Mortgage and Collateral Trust Bonds Series "R"

Due: October 1, 1976

Price: 100 and accrued interest

The Shawinigan Water and Power Company, one of the largest producers and distributors of hydro-electric energy in the world, serves an area of some 16,000 square miles in the Province of Quebec.

One-third of the Company's gross revenue is derived from retail sales in more than 500 communities — the balance from sales of large blocks of power to industrial consumers and to other electricity distributors.

Earnings available for bond interest, after charging depreciation, have averaged approximately 4 times such interest charges in the five years 1951 to 1955 inclusive.

We recommend these bonds for investment. Descriptive circular available upon request.

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Royal Trust Buys Barclays Trust

Royal Trust Co. has agreed with **Barclays Trust Co.** to buy all outstanding stock of the latter company.

Barclays, which has conducted a general trust business in Canada since 1951, will continue to operate from its main office in Montreal under the same corporate name pending completion of legal steps to integrate its business with that of Royal Trust.

Barclays' manager, C. D. Paxton, will join Royal Trust as an assistant general manager.

The Toronto manager of Barclays Trust, A. J. Shepley, will become investment and trustee manager of Close Bros., U. K. investment firm which recently opened an office in Toronto.

On February 1 of this year, **Barclay's Bank (Canada)** was acquired by **Imperial Bank.** Both the bank and trust company were subsidiaries of Barclays Bank Ltd., London, Eng.

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Montreal Metro Has Bond Issue

MONTREAL (Staff) — The Montreal Metropolitan Commission at mid-week was scheduled to open tenders on a new $3,872,000 serial bond issue, maturing in various amounts annually between Nov. 1, 1955, and Nov. 1, 1985.

Proceeds will be used to reimburse the commission for loans which it advanced to certain municipalities to carry out local improvement works and for other municipal expenses.

The commission's debt, including bonds issued by municipalities and assumed by it, now totals $29,743,000. To meet this debt, the commission holds serial notes from the municipalities which, with funds on hand, represent more than $35 million.

Foreign Exchange Rates

Noon Value in Canada
Week Ended Sept. 21, 1956

	U. S. $	U. K. £
Mon.	97 16/32	2.71 3/8
Tues.	97 20/32	2.71 6/8
Wed.	97 25/32	2.72 1/8
Thurs.	97 23/32	2.72
Fri.	97 22/32	2.71 7/8
Ave.	97 106/160	2.71 33/40

U. S. rate reported by Bank of Canada.

U. K. bid rate reported by Toronto-Dominion Bank.

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NATURE of BUSINESS

FP-16

The Editorial Page

When You Retire—Don't

When you retire, make a clean break with your former business and start a brand-new life of your own. Modern business can provide financial security through a pension to its retired at 65 but it cannot solve for them their own psychological problems.

That advice and that warning comes from Clarence B. Randall, former president of Inland Steel and one of America's more articulate good citizens. When the calendar and the clock said he was 65 last April, Randall closed his desk and walked out as he had always planned to do. But while he retired definitely and completely from the steel business he certainly did not retire from an active life.

Instead he took up an entirely new career, that of special adviser to President Eisenhower on foreign policy. And now, nearly six months after the change, Randall is urging other retiring executives to follow a similar course.

It is a mistake to try to keep in touch with the old routine and relationships, he says. It is not good for the retired and not fair to the younger men carrying on. Far better to make a clean break and seek a new and different type of employment. He lists many opportunities—public office, hospital administration, serving on boards of universities and social agencies.

"Such organizations," he says, "could not possibly afford to pay for the quality of ability and devotion which the happy retired man is willing to give. The only protection required is that the new responsibility be accepted for a relatively short term or with a natural cut-off date."

Retirement, as this experienced executive points out, is a natural phenomenon, as natural as being hired, and when planned for and accepted, it can open up possibly the most useful period of a man's whole life.

Worries That Were Needless

There's an obvious lesson for Canadians in the lively political tussle now going on south of the 49th parallel. It is never wise to assume that a political party is dead until it has been buried.

Not long ago, political theorists were worrying about the Democratic stranglehold and about a "one-party" American government. Having consigned the Republicans to the grave they were asking how the benefits of sharp political controversy were to be restored to the American scene. However, the GOP woke from the dead, won an election, and has now exhumed Herbert Hoover to remind the voters of the glories of the Republican past.

More recently, the same political theorists got to worrying about "the Republican stranglehold" on the American body politic. With the government having more money, more advertising agencies, and a bigger hero than the Democrats, how could the two-party system survive, they asked? The election forthcoming this November, it was felt, would be just a formality. Adlai Stevenson was a sacrificial lamb and the nominating conventions a quaint survival of a simpler era. This theory, too, has undergone some changes — especially in the State of Maine.

We think of these things when we hear Canadians bemoaning the long reign of the Liberals and the decline of the Opposition.

It is surprising how fast things can change when the ins become over-confident or when the outs really address themselves to the problem of providing candidates, and policies that meet national needs.

There is no call, yet, to compose funeral orations for Canada's party system.

Utopia?

Note for the record: Richard Nixon, U. S. Vice-President, said at Colorado Springs there would be a four-day work week in "the not too distant future. Our hope is to double everyone's standard of living in 10 years."

Foreign Capital in U. S.

Amid the sound and fury which rages about the question of U. S. investment in Canada, it's occasionally pointed out that early development of the U. S. economy depended heavily upon money from outside its borders.

As a matter of little-known fact, the U. S. continues to make heavy use of capital from beyond its borders.

In 1955, foreign-owned assets in the U.S. rose to almost $30 billion from $23.6 billion in 1953 and $26.8 billion in 1954. Of that $30 billion, more than 40% was long-term investment.

Western Europe accounts for a bit more than half the value of foreign investment in the U. S., Canada about 14%, other nations and international institutions the remainder.

Foreign assets last year in the U. S. earned $640 million for their owners, including $160 million for Canadians.

These are substantial figures.

Big Fellow Returns

Flocks of passenger pigeons might still be flying across eastern North America today, had there been a few more active conservationists 75 years ago. At any rate we can thank these people for saving the moose, that ungainly animal, as big as a horse, which is more closely associated, in the mind of the average person, with the Canadian wilds than is our national beaver.

Not many years ago the moose was on his way out. He had completely disappeared from large areas of New Brunswick, Quebec, Ontario and lower British Columbia. He was getting scarce even farther north.

Then came closed seasons and other forms of conservation. Trainmen and summer tourists began seeing moose again and soon in places where he hadn't been seen for 50 or 75 years before.

In fact he has thrived too well perhaps for his own good because now hunting is to be permitted again and in some cases within a hundred miles of our biggest cities.

The Hungry World

On this continent it may be hard to realize it, but hunger remains one of the world's greatest problems. That is made clear by the current report of the United Nations Food and Agriculture Organization.

This points out that while world food rose by approximately 3% in 1955-56, this would be barely sufficient to take care of the natural increase in population. Moreover, it adds, virtually all the gain was accounted for by countries like Canada, Australia and United States, where there are already food surpluses. In the much more populous Far East and in Latin America, production is still running below prewar.

Important gains have been made in dealing with this massive problem in recent years, but as UN's FAO report points out, so many people are involved that there is no hope for any quick solution.

To some extent and in emergencies, shipments from surplus areas to shortage areas will help but because of the enormous volume needed, the great bulk of the human food must be produced close at hand. In other words, the only hope of permanent solution lies in much greater food production in those areas which are now so short.

There are various ways in which this can and is being done. It is possible to reclaim unproductive land. It is possible to introduce new materials, new seed strains, new tools and fertilizer which will double and triple production. It is possible to ease and to multiply methods of transport from area to area and to improve storage and processing. But all these things take time, money and above all, leadership and direction. It is just not possible to walk into a country like India or China and say that there must be a revolution in agriculture and in food habits, that new ways and new tastes must be learned overnight.

Winnipeggers are Irked

During World War II, the citizens of Winnipeg (like residents of many another town in North America) spent some spare time drawing maps of the world with a projection based squarly on the centre of the city itself. On such a map, the town in question becomes the hub of the universe, and the shortest air route between any two points appears to pass through the town's own airport.

Accordingly, when Scandinavian Airlines began to fly over the pole from Sweden to California, it occasioned no surprise in Winnipeg that a stop-over was made at Stevenson field. This, Winnipeggers thought, was the beginning of the development of international air travel through Winnipeg that had been planned for the postwar world.

The expectation of being an air centre came more easily to Winnipeg than to some other places; the city is already a rail centre, and owes its existence to its position on the trading routes of North America. The funneling of air transport and travel through Winnipeg seemed a logical extension of the function of distribution which was already the city's primary concern.

All this is necessary background for understanding the degree of irritation in Manitoba over the refusal to grant landing rights to SAS and the delay in providing adequate terminal facilities at Stevenson field.

Winnipeggers can see one of their primary economic assets being wasted, not through the ordinary forces of economic development, but by a policy of the Federal Government.

It may be that Winnipeg would not develop as an aerial hub, even if passenger rights were free for the asking. But Winnipeggers feel, with some justice, that the onus is on the Federal Government to show why this is so. In the absence of any proof, the development should surely be given a chance to take place.

Who is Inferior?

Ever since the dawn of history, Man has been trying to get rid of the joe-jobs—the tedious, repetitive tasks that consume time and energy out of proportion to results. Only in eras when large numbers of people have been able to free themselves from joe-jobs have there been any significant advances in civilization.

Until recently, the standard method of getting out from under these tasks was to find someone else to whom they could be handed. In Greece, the cradle of democracy, the standard of living and the leisure of the citizens was founded on the labor of slaves. In Western Europe, during the Renaissance, serfs, peasants and the like did the joe-jobs. During the spacious days of Queen Victoria and King Edward, the joe-jobs were done by human beings who were not technically slaves but whose lot in life wasn't much better.

All of these solutions to the problem of providing leisure depended on the ability of human beings to convince themselves that other human beings ought, as a group, to be stuck with the joe-jobs. It was a theory of race, or a theory of class, or some variation of the notion of natural superiority.

The advances of modern psychology, plus the liberal philosophies hammered out in periods of leisure, have made it difficult to sustain this notion. Differences of talent and training obviously exist between man and man—but differences in kind are becoming less plausible.

Fortunately, there is a way out of this dilemma for modern man. We can use the machine for the joe-jobs. In essence, automation, if it means anything, means release from the tedious, repetitive tasks.

This is a welcome development of infinite importance, and the fact that it brings changes shouldn't be allowed to mask the basic advance involved in the increased use of machines. Any change—from slaves to serfs, from coal to oil, from sail to steam—creates problems and arouses opposition. Those who have most to gain from change are frequently the fiercest opponents.

These days, there's plenty of talk about the problems of "automation" and the dangers that may arise out of sweeping changes in the way we work. Let's not forget that the main change is this: now we can, for the first time, get rid of the joe-jobs without kidding ourselves that someone else is basically inferior. That change is pure gain.

Napier Moore's

Scratch Pad

MICHAEL DENISON, the actor, who, by circumstances beyond his control, happens to be my cousin-in-law, popped in to see us the other evening. He had been appearing in George Bernard Shaw plays at the Edinburgh Festival, and next morning was off to Berlin, where, under the auspices of the British Council, the same company is presenting "Fanny's First Play" in English. The British Council does things like that.

In Edinburgh, Michael attended a civic reception given in honor of the Festival artists and visiting nabobs. This is the story he told:

"I was standing amid the throng nibbling a sandwich when one of the hosts came up to me and said, 'Do you speak French?' I said I did. He seemed delighted. 'You must come over and talk to the Mayor of Nice,' he said. He led me to the Mayor of Nice, introduced me, and bustled off. In less than five minutes it became apparent to both the Mayor and myself that we had exhausted our topics of conversation.

"A day or two later, I was at another function when an official approached me and said, 'Do you speak French?' I said I did. 'That's wonderful,' he said. 'You must come and meet the Mayor of Nice.' I was again introduced, and I'm afraid our second conversation was no more brilliant than the first.

"Now I don't expect you to believe this, but there was a third do. And once again a rather bothered chap came up and said, 'Do you speak French?' I said, 'The Mayor of Nice, I presume.' 'Yes, you **must** come and talk to him.'

"If in Berlin anyone says to me, 'Do you speak French?' I'll know what's coming next."

• • •

THE SEASIDE RESORT of Brighton has become a convention city. No sooner did the Trades Union Congress move out than the International Brotherhood of Magicians moved in. Professional and amateur conjurers came from all over the world. Also present were the people who sell tricks. One, Harry Stanley, said he gets a bit worried about the shoals of orders from the Orient, particularly from India and Egypt. It seems that Orientals take the firm's trade advertisements too seriously. "They'll expect a magic wand to be a magic wand," moaned Mr. Stanley.

THE WAYS OF THE RUSSIANS continue to baffle the British. The latest puzzle pertains to the Bolshoi Ballet, due to appear at Covent Garden in the near future, an attraction which caused customers to wait in queues for three days and three nights. The Bolshoi's scenery arrived at a London dock on a Russian ship. There were 80 tons of it. It was unloaded. Lorries came to take it away. But the Russian captain refused to allow it to be moved until permission came from Moscow. It lay on the dock for one week before the official okay came.

• • •

I WENT UP TO LONDON to have a pleasant luncheon with my old friend Glen Bannerman who, when he is on the job for Canada's international exhibitions administration, whizzes around with amazing speed.

I returned to the country to find that I had to do some whizzing too. It would have to happen just a couple of weeks before the Moores depart from the Middlesex cottage they have occupied during the monsoon season, known in England as "Summer." The gas, which we use for cooking, had spluttered, faded and died.

The great forces of nationalization move slowly, but by dint of vigorous phoning I got action. Inspectors, fitters and workers of lesser status arrived on bicycles in stately procession. They thought the meter was blocked. So they took out the meter and put a new one in. No gas. There must be a blockage in the pipes, which come a long way from the main.

Now it wasn't the fault of nationalization that nobody had the remotest idea where the pipes were buried. The house pre-dates nationalization by many years. Workmen started to dig exploratory holes in the flower beds. The place began to look like the Turner Valley in the early days of oil drilling. They found the pipe. The foreman said it looked as if they'd have to dig up the driveway. The driveway is about an eighth of a mile long and very narrow. I explained that I was sailing for Canada October 3, and that I'd have to get out. They dug more holes, to discover that the pipe wasn't under the driveway at all. It ran in the opposite direction. It ran right through our neighbor's property. The foreman said, "Oh dear!" He said they'd have to dig up the neighbor's garden, and it looked to him as though they'd have to dig up his concrete driveway. While they were doing this they'd have to shut off the neighbor's gas, otherwise his meter might go through the roof.

He said, "Sir, I know you don't think much of nationalization, but this **never** would have happened under nationalization. There are **rules** about such things."

I am due to speak at the Empire Club in Toronto on October 11. There will probably be a strong smell of gas.

Stop Me If—

An old Indian took his watch to be repaired. When the jeweler took the back off, a dead bug fell out.

The Indian, astonished, exclaimed: "Ugh! . . . No wonder watch stopped. Engineer dead!"

• • •

"Mother wants to know whether she can come to stay with us for a week or so," remarked the young bride to her husband.

"It's thoughtful of her to suggest an alternative. Tell her to sew," replied the man of the house from behind his newspaper.

Post Scripts

Bar Association Head

A tall, whitish-haired, reddish-faced, soft-spoken Westerner has been named president of the Canadian Bar Association. He is Everett Clayton Leslie, 63, Maritime-born son of a Scottish father and now a partner in the Regina firm of Macpherson, Leslie and Tyerman.

MR. LESLIE

"I believe the major problems facing the legal profession today," he told The Financial Post, "are the accommodation of the principles of law to the very rapidly changing industrial and social conditions and the relationship between courts and the greatly increased number of administrative tribunals established as a result of these expanding and changing conditions."

He believes these matters can be reconciled. The law, he said, sometimes adjusts itself slowly to changing conditions but it must in the long run represent the will of at least a majority of well-informed public opinion.

Born at River Hebert, N.S., 1893, Leslie was educated at public and high schools there. He entered Acadia University, Wolfville, N.S., prior to the outbreak of World War I but his studies were interrupted when he enlisted as a private in the infantry in 1915, his sophomore year.

He served overseas with the 85th Nova Scotia Battalion and was commissioned a lieutenant while in France. In 1920, he returned to Acadia and graduated in 1921.

For reasons of health, he went west and graduated from University of Saskatchewan Law School in 1925. He was admitted to the Saskatchewan Bar in 1926.

On his graduation he became associated with M. A. Macpherson, as a partner in the firm.

Married to Frankie Briggs of Swift Current, Sask., in 1933, the Leslies have one son, Larry, 18, who enters Acadia this year. Mrs. Leslie is president of the Saskatchewan Division of the Canadian Red Cross.

Among hobbies, Leslie lists reading. "Biographies of politicians and lawyers are my favorites."

Interested in all sports, he is a member of the Wascana Curling Club and an executive of the Saskatchewan Roughriders. But he's canny when talking about the possible winner in the Western football conference.

He is a member of the Assiniboia Club, Canadian Club, a past provincial president of the Saskatchewan Command of the Canadian Legion and present provincial chairman of this body. He also is a member of the Board of Governors of the University of Saskatchewan.

How does he manage time for all these activities? "I'm an early riser but I don't claim it as a virtue. When I wake up, I find it easier to get up and get to work. I'm in my office by 8 a.m."

• • •

Radio Engineer Head

Physicist John Tasker Henderson, new president-elect of the Institute of Radio Engineers, is one of the young electronics industry's pioneers-turned-VIP. Only 50, he has already: (a) done substantial work on the problem of radio-type static, (b) modified the standard cathode ray tube for direction-finder use, (c) directed the National Research Council group taking part in the gigantic geodetic survey of the north, and (d) got more than halfway through the exacting task of bringing Canada's electrical standards up to those of the U.S. and U.K.

He's now principal research officer of NRC's Applied Physics division and regional director of IRE in Canada.

He was born in Montreal, went to Westmount High School there and then—because at the age of 16 he wanted to be an aeronautical engineer—on to McGill. At McGill he found there wasn't an aeronautical engineering course but there was a radio engineering course; he took it because the future in electronics looked even better. By 1928, he had his Master of Science degree.

Then he went to London, Eng. for his doctorate, studied under Nobel Prize winner Sir Edward Appleton. The winter of '31-'32, he had time on his hands between handing in his thesis on lightning-and-radio and his oral examination, went to Paris for more physics on a Quebec scholarship.

Back in Canada later that year, he took part in beginning experiments to try to find out what happens in the ionosphere (an electrical layer 100 miles up) in a total solar eclipse. (Ionization, which is a good thing because it bounces radio signals back to earth, was found apparently to be caused by ultra-violet rays from the sun.)

He returned to Europe, the following winter, studied under the brilliant Johann Zenneck in Munich, picked up a working knowledge of German.

In 1933, he was asked to run the radio section in the physics division of NRC. National Research Council then had about 150 staff (today: 2,000). He tried to find out how static originated, couldn't, dropped the uneconomic problem—still unsolved—in 1937.

He turned then to adapting the cathode ray tube for use as a direction finder. Similar work had been done in England. His work led to improved ship-to-shore and air-to-ground equipment which proved extremely useful in World War II during which he served as an RCAF squadron leader setting up East Coast radar installations.

The day after VE-day found him in Munich again, this time poking through German radar developments, a job which took him a year. Henderson says the most important thing his search revealed was that the vitally necessary co-operation between scientist and soldier was missing in Germany.

For three years after June, 1946 he headed the NRC group taking part with the RCAF and Federal Mines department in a geodetic survey of most of our north. The survey was done in aircraft with electronic instruments to measure the distances (usually about 200 mi.) from a marked point back to two known points. Maps can then be made from aerial photographs to fit the geodetic framework.

In the fall of '46 Henderson went to New York as scientific adviser to the Canadian delegation on the UN's Atomic Energy Commission. "That was when Gromyko kept saying 'Nyet!'," he recalls.

In 1949 he returned to Canada to his present position to begin the long job—about two years to go—of bringing up Canadian electrical standards. In 1951 he was given the additional job of obtaining radio standards.

A typical experiment under his direction is the one attempting to measure 'g.' It's all very well, he says, to know that it's 32 ft. per sec. per sec., but what are the decimals?

So he and his staff are dropping a special measuring ruler in a vacuum, photographing it correct to the 10-millionth of a sec. as it drops. (The ruler's temperature must be known to the 100th part of a degree.)

Dr. Henderson is married, to the former Murial Vivian Lewis of Great Village, N.S. That's near Truro. They have three children: David, four and two-year-old twins, Ruth and Jack.

They live in Ottawa's south suburbia.

He's a hi-fi fan—"Mozart and the quieter stuff"—and is looking for a way to keep the volume up after the children have gone to bed.

What Others Are Saying

Editorial of the Week

Take It Easy

Saint John Telegraph-Journal

The news of late seems to record a succession of prominent men stricken with heart attacks or other ailments usually associated with overwork and mental strain.

Is this evidence of an increase of such cases or of more thorough news reporting? Possibly both factors are present. It is noticeable that more well-known men than women seem to be sufferers.

Do men generally speaking work harder today than their fathers did? It is doubtful whether this could be established, but it is probable that modern life demands that they work faster and it has long been accepted that "it's the pace that kills." Obviously this suggests that the eminent should be advised to slow down, to take more time over their tasks. That's easier said than done, of course. The whole tempo of life has been accelerated and leaders are forced to conform to the prevailing pace if they are to continue to lead. However, much of the rush and scurry is habit and many who have set their minds to it have discovered that it is possible to slacken speed and yet accomplish just as much—more in the long run.

It is largely a personal problem. Each man who notices himself tense and rushed has to sit down and talk it over with himself first with guidance from his doctor. He may be wise to discuss it with his wife and very likely he will have to mention it to his business associates.

The world can ill afford to lose its top men and for their own and others' sakes it would be well if they would take warning and slow down as much as they can.

Other People's Views

CHURCH ATTENDANCE must be promoted, says The **Owen Sound Sun-Times.** "If other organizations which appeal for human attendance did no more than the churches do to promote that attendance then they would be much emptier than our churches."

YEAR AFTER YEAR, there are tales of carelessness in the bush that send a chill up the spine of any real hunter, declares the **Campbellton, N.B., Graphic.** "Unfortunately, the careless ones cannot be detected until after they have wounded or killed a fellow human being. There is no good reason for any woodland tragedies. So-called hunting accidents, like our highway carnage, can be traced for the most part to sheer carelessness."

FEDERAL PLANNERS undoubtedly face great problems as they grapple with the question of a suitable defence set-up, says the **Calgary Herald.** "Predicting accurately just what form a future war might assume and preparing for every contingency is obviously a near-impossible task. All the same, it is a task which must be faced and civil defence is a large part of that problem. Whatever unknowns might face us in front-line combat, it is a certainty that civilian populations will be involved."

THE MUNICIPALITIES are justified in squawking, asserts the **Peterborough Examiner.** "The senior governments are not doing what they should to assist municipalities financially. The scale of grants the Provincial Government is making is like the crumbs the rich man throws his dog. Nor is the Provincial Government dealing fairly with the distribution of taxing resources and revenue. Resentment is growing among hard-pressed municipal ratepayers and their councils."

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September [illegible], 1956

McGEACHY LOOKS AT PARIS

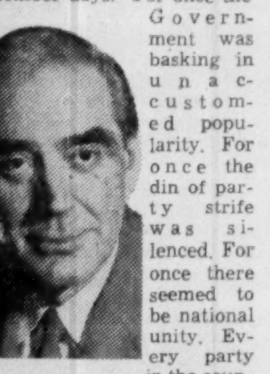
France: The Quarreling Stops

By J. B. McGEACHY

PARIS—Summer came late to France, as to Britain and Canada. August was as moist and windy a month here as at home. But late September days poured brilliant sunshine on this lovely town. Boulevardiers, flaneurs and tourists strolled in thousands along the Champs Elysées, pausing at sidewalk cafes for an aperitif, a cup of tea or a dish of ice cream.

The delights of Paris, still never doubting for a moment and perhaps justifiably confident that it is the capital of civilization, art, philosophy and good living, are as they always were in living memory. The city of light still beckons to people of taste, people who want to find out what joie de vivre really means and people who merely want a good time.

Politically, Paris was very interesting to watch in these September days. For once the Government was basking in unaccustomed popularity. For once the din of party strife was silenced. For once there seemed to be national unity. Every party in the country, except the tiny Communist minority and the fellow travelers, was in favor of taking a tough line with President Nasser of Egypt.



J. B. McGeachy

L'Humanité, the Communist daily, and its sotto voce Marxist co-religionists, screamed that Mr. Nasser had merely asserted the natural rights of the Egyptians, that British and French sabre-rattlers were obsolete types in the middle of the 20th century and (rather surprisingly and most inaccurately) that the Mollet government was allowing itself to be used as a tool of British imperialism.

Every other newspaper and every non-Communist politician felt perfectly sure that the right line for France was to resist Nasser and put him in his place.

Difficult Discoveries

What was difficult to discover, here as in London, was exactly what kind of action ought to be taken. Salvoes from gunboats? The dropping of parachutists? An amphibious invasion, against Egyptian fire, at Alexandria?

Nobody seemed to know; and as the days passed it became clear that in fact no military action at all was likely or advisable.

Economic pressure on Egypt was slowly, reluctantly but inevitably accepted as the less dangerous course. France can be supplied, for the time being anyway, with oil from Venezuela and the U. S. Ships can use the Cape route. A pipeline may be built through Israel. These various solutions are talked of vaguely and grandiloquently, with no assurance that they will permanently solve the problem raised by Nasser's bold stroke.

What was it that united the French, normally divided into jarring sects that never stop quarreling, on the Egyptian question? It was a belief that the Egyptian strong man (a phrase which means, according to Punch last week, a dictator who is for the time being on our side) threatens the French position in North Africa. As viewed from North America, this position may look like old-fashioned colonialism; but it is difficult to discover a non-Communist Frenchman who shares this opinion.

Algeria, as the French see it, is a part of France. Nasser (this may be news to some readers in North America) is accused of sending both arms and military instructors to the Algerian rebels. That is, he is accused of interfering in French internal affairs.

Nasser the Agitator

It is also said that he is spreading anti-western propaganda, not only in French North Africa but in the parts of the dark continent that still belong to Belgium and Portugal. It is said that he sees himself as a man of destiny fated to throw European influence out of Africa, unite the whole continent under his leadership and restore Egypt to the position it occupied in the world 5,000 or 6,000 years ago.

"We do not call him another Hitler," said a well-informed French official who reflects government opinion. "That would do him too much good. For one thing, Egypt isn't Germany. For another, to call him a Hitler would only enhance his prestige among the Arab nations who find no fault with Hitler except that he did not kill enough Jews." (I quote this only as example of the intensity of French feeling.)

"But Nasser is like Hitler just the same," my official friend went on, "first of all because he has no respect for international treaties and second because he has dreams, dangerous dreams, of acquiring power over a whole continent. Of course he is nothing in himself. Egypt is nothing, a country without industries or armed forces of any consequence; but he would have backing in his adventures. Russia would support him; that is why he is so dangerous."

If you remonstrate with a Frenchman who talks like this, if you point out that Nasser is not a Communist but must know that any Egyptian hegemony over North Africa or all-Africa would be a Communist hegemony, you will get the reply that Nasser, though very shrewd, audacious and energetic, is an uneducated man with no knowledge of the world and no appreciation of international politics.

No Working Out

In the end, no matter how diligently or profoundly you pursue the answer, you are bound to come to the conclusion that the French have not worked out the logical implications of their policy and their thinking. The outsider simply cannot understand what end result the French hope for. He is driven unwillingly to the view that they really do not know themselves. Does anybody else know what is to come out of the current clash of new and old political systems?

Pre-occupation with the Suez question (so intense that film and stage shows were punctuated with announcements of the latest Suez news, and Le Monde could give four of its 12 pages wholly to "le crise") did not prevent Paris from enjoying itself and offering its guests the traditional joys.

Food must be discussed in any story by a visitor to France. A popular custom everywhere, eating here is also an art, cultivated with passionate enthusiasm and delicate discrimination. French food and drink are as good as ever. You have only to eat a sandwich at a wayside estaminet to discover, or be reminded, that Canadian bread and butter are anaemic imitations of the real thing. The humblest chef in a small town will receive a compliment to his vol-au-vent, chateaubriand or sole meuniere like a tenor acknowledging applause in an opera house. In Paris it is practically impossible to have a bad meal.

Food is Expensive

But food in France is expensive, at least by the standards of the past. Partly, at present, this is explained by the severe frosts of last spring which destroyed fruit and vegetable crops. Partly it is the result of French protectionism. Prices are supported, imports are strictly controlled.

The visitor, to digress for a moment, quickly discovers examples of this protectionism if he is foolish or extravagant enough to ask for what he is accustomed to having at home. A cake of French soap is inexpensive enough; but call for a cake of some North American soap you're used to buying at 15c and you find it costs the equivalent of about a dollar.

"C'est importé, monsieur."

If you insist on drinking anything so outlandish as ginger ale, you are pained to learn that a glass of it here fetches five to 10 times the price of a sound and generous glass of wine.

Again, "c'est importé."

To come back to food in general, I inquired how the French worker manages to eat heartily on his wages. One reply I got was: "The French worker eats very slowly"—and indeed he can spend a long time over a thick slice of bread, a hunk of cheese and a glass of beer. Another reply was that the French worker, earning on the average 14,000 francs a week, which is the equivalent of about $40, spends 48% of his income on food. But a Paris taxi driver told me proudly that he earns 30,000 francs a week and feeds himself well on 1,000 francs a day including a litre of wine, the cheapest item in his diet. This man, incidentally, regards migration to North America, which he once visited, as about the most lunatic notion that could enter anybody's head.

More than Bread

The visitor, of course, wants more than bread and cheese, however excellent, for his noon or evening meal; and he finds that the cost of a bang-up, but not extravagant, lunch for four may run to 5,000 or 6,000 francs, including abundant wine.

It sounds expensive but this may be only an optical illusion induced by the profusion of zeros. Translated, 5,000 francs is about $14; and certainly there is no place in Canada that I know, from Montreal to Vancouver, that would provide for $14 the gastronomic and vinous delights that can be bought for four with 5,000 francs in Paris.

Of course if you cannot be happy here except in one of the grand hotels on or near the Champs Elysées, where you will meet no Parisians except senators, you will pay heavily for an excellent imitation of North American service. But I found in Saint Germain des Pres, on the left bank, a scrupulously clean double room, with broadloom, a balcony and breakfast in bed, private bath, for 1,500 francs (a little more than $4) a day. If you are prepared to live in the real Paris, a holiday in this country, even in its supposedly expensive capital, need not be too taxing on the pocket book.

The sights and sounds and smells of Paris are as pleasing to the senses as they always were. But there is one change—since my last visit anyway. The sounding of motor horns is now forbidden. The magnificent anarchy of Paris traffic, everyone following his own devices with astonishing virtuosity and swiftness of mind, is no longer accompanied by the raucous honking that used to rend the air. But one evening an unmistakable honk, followed by a procession of cars, broke the musical hum of talk and traffic on a boulevard.

Ministers May Honk

"C'est le ministre de justice," said the taxi driver.

Ministers may honk. All others keep quiet.

Paris has perhaps the most cosmopolitan theatre in the world. There are plays running here by Shakespeare, Shaw (La Profession de Madame Warren, a chestnut of about 1897), Pirandello, Somerset Maugham, Graham Greene, Ustinov, Brecht but (oddly enough) no Tennessee Williams; and there is of course the customary choice of classic opera, light opera, the Comédie Francaise in Molière, Racine and Corneille, not to speak of English, American, Russian, German and Italian films.

The small booklet prepared for tourists, called This Week in Paris, probably lists more different kinds of entertainment, in more different styles, languages and genres, than any similar booklet published anywhere on earth.

Having been deeply stirred by Anouilh's "Waltz of the Toreadors" in London, I went to "Ornifle" by the same author. It is a very interesting play, cutting as deep as the Toreadors, but it has less action and more talk; and your French has to be in very good shape indeed if you are to enjoy it. But fragmentary French will do for the musical comedy, "Mediterannée," a confection of sweetly sentimental songs, graceful dances and decor, lighting and costumes in the most exquisite taste.

A Delicious Evening

Marcel Marceau, the mime who was a great success in Toronto and New York as a one-man show, has a troupe of half-a-dozen junior mimes for his Paris show. Together they produce a delicious evening, comprehensible without any French whatever, though a nodding acquaintance with French politics is useful in understanding some of the satire.

It is unnecessary to be articulate in any language whatever, except perhaps the mating calls that are universal, to enjoy the Moulin Rouge in Montmartre. This night-spot has abandoned the can-can which delighted Toulouse-Lautrec and now goes in strongly, like other Paris music halls, for "le strip tease Americain."

The Gallic version of this U. S. fertility rite bears little resemblance to the original. The French disrobers do not squirm with archness. They are not coy, they do not tease, they waste no time. They merely step on to a large glass stage, lit from below, where they undress like any housewife, and, to judge by the applause and the hoarse calls of bravo, with the desired aphrodisiac effect.

Two Canadian items from the same issue of Le Monde, the most reliable paper in Paris in the sense that its news and its opinions are kept separate and not mixed up. Mayor Drapeau of Montreal, guest of the Paris municipal council, told a Parisian audience that New Brunswick would soon be a second French-Canadian province and that use of the French language was spreading rapidly westward, as far as British Columbia.

Le Monde's theatre critic, reviewing the recent Edinburgh festival, singled out the Canadian Stratford's production of Henry V for special praise. For the first time in his experience, he said, the performance of the French parts in this Shakespearian play was not a parody. (Canadian Stratfordians will remember that these parts were played by Gratien Gelinas and others from Quebec province.)

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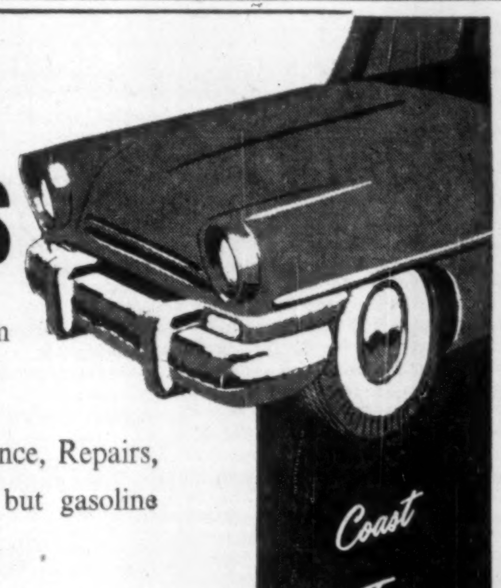

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Engine Without Crankshaft Spurs U.K. Campaign Here

(Continued from page 1)
vide machine shop service for ABM Canada. Negotiations are also in hand to secure further property in Montreal.

General Motors is understood to have a clause in its agreement entitling the U.S. corporation to manufacture through its wholly owned subsidiaries in Canada.

In Toronto this week, in course of a 36,000-mile world tour was Lawrence W. Robson, 52-year-old dynamic chairman of Associated British Engineering. Last week, within a few days of his arrival in Montreal, it was announced that his company had set up its Canadian subsidiary and purchased Hepworth Lachine Engineering. This week, two days after his arrival in Toronto, he told The Financial Post he had made an offer for property in that city and was negotiating with Canadian firms for the manufacture of turbines and other ancillary equipment to go with the free-piston and other ABM engines. On Tuesday morning he was in Vancouver with the primary object of securing property in the West Coast city for a servicing centre and making contact with manufacturers.

Trans-Canada Centres

His plan is to set up sales and service centres in Montreal, Toronto and Vancouver with ancillary manufacturing arrangements with Canadian companies. Preferably in Toronto and Vancouver, he would like to follow the action taken in Montreal where his company has bought over an existing Canadian company. But it's unlikely that developments in these two cities will be announced before the end of the year.

Mr. Robson returns to Britain at the end of this year and he believes that six months from now his plans will be in operation, and ABM will be in Canadian markets in a big way.

ABM manufacture the free piston engine in two types—350 shaft hp and 1,000 shaft hp.,—and for it they claim advantages over conventional engines of flexibility, weight and space, use of low grade fuels, reliability of operation and simplicity.

The engine is of French development and last year in the transactions of the Institute of Marine Engineers, U.K., it was reported: "Already 70 of these machines are operating in French ships and industrial plants. It is therefore encouraging to see steps being taken to further its application in the marine field in this country (U.K.). Smith's Dock Co. is preparing several schemes for certain interested shipowners for complete installations for various classes of vessels."

Hopes For Development

In this year's ABM annual report, Mr. Robson referred to the group's decision to take part in the promotion of the production of the free piston gasifier based on Pescara-Muntz designs and in which both General Motors of America and Renault of France were interested. He stated: "Already a number of these units are in active service on the continent of Europe and in North Africa."

He added: "In deciding to proceed on this project, your directors are confident that a market exists for the free piston gasifier principle in the fields of power generating and rail traction and also for marine and automotive applications."

Robson heads a group that has sales worth some $18 million annually to more than 60 countries. He expects to find ready markets for his engines in Canada particularly for marine service through the Seaway and the developments in British Columbia.

Seaway Possibilities

He told The Post:

"The new deep canals and locks of the St. Lawrence Waterway will permit use of ships of conventional design propelled by conventional, long wearing direct reversing marine engines. In two or three years, these engines will play a more important part in shipping because of the Seaway project and expansion of Canadian shipbuilding facilities.

"Because of limitations imposed to date by inland canals, vessels have tended to be powered by lightly built, high speed engines. We think with the development of trade, the external need for Canadian shipping will be met by engines of the Polock and Widdon type (both produced by the U. K. firm. For the lake and coastal trade, ships will be propelled by turbines energized from free piston gasifiers for which the group has the Commonwealth manufacturing right."

Companies comprising the Associated British Engineering group are: **The Bergius Co., British Polar Engines Ltd., Free Piston Engine Co., Henry Meadows Ltd., A. C. Morrison (Engineers) Ltd., The Parsons Engineering Co., H. Widdop & Co.**

Authorized capital of the group consists of £750,000 6% cumulative preference stock of which £450,000 is issued and £1,250,000 ordinary stock of which £1,057,890 is issued. Total capital and reserves amount to £406,697. The group showed net profit last year of £304,856 against £148,556 the previous year. Total current assets at March 31, 1956, amounted to £2,969,235 vs total current liabilities and provisions of £1,038,230.

ANNOUNCEMENT

CARLING ANNOUNCEMENT

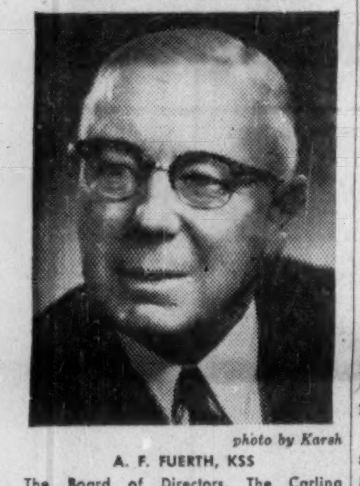

photo by Karsh

A. F. FUERTH, KSS

The Board of Directors, The Carling Breweries Limited recently elected Mr. A. F. Fuerth Chairman of the Board and a Director of the Company.

Mr. Fuerth formerly was President and a Director of Brading Breweries Limited, Ottawa, and has for many years been identified with the brewing industry in various executive capacities.

In addition to his association with the brewing industry, Mr. Fuerth is also a Director of the Windsor Medical Services Inc.; chairman of the Board of Regents, Assumption University of Windsor; chairman of the Advisory Board, Hotel Dieu Hospital, Windsor; Secretary and Director of the Windsor Community Services Inc.; Member of the Advisory Board, Canada Trust Company, Windsor; Director of the Ontario Hospital Association.

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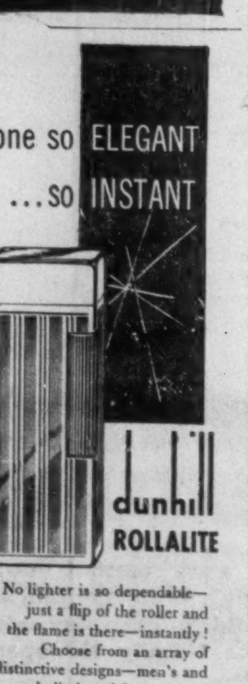

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64 GERRARD ST., TORONTO

Auto Production

	Wk. End Sept. 22	To Date 1956	To Date 1955
Am. Motors:			
Hudson	....	1,156	....
Nash	....	2,907	....
Rambler ...	36	36*	....
Total cars	36	4,099	2,818
Chrysler:			
Chrysler ...	....	5,042	....
Desoto	....	1,398	....
Dodge	....	34,988	....
Plymouth ..	....	30,237	....
Total cars	....	71,665	65,517
Dodge	64	5,026	....
Fargo	126	4,432	....
Total trucks	190	9,458	6,991
Cars, trucks	190	81,123	72,508
Ford:			
Ford	738	53,146	....
Mercury	....	6,251	....
Meteor	534	24,612	....
Monarch ...	....	6,693	....
Total cars	1,272	90,702	97,619
Ford	464	15,967	....
Mercury	137	6,424	....
Meteor dlvy.	....	496	....
Total trucks	601	22,887	19,757
Cars, trucks	1,873	113,589	117,376
G.M.:			
Buick	....	14,738	....
Chevrolet ..	384	49,003	....
Oldsmobile .	....	7,968	....
Pontiac	48	33,022	....
Total cars	432	104,731	128,157
Chevrolet ..	96	17,135	....
GMC	....	12,077	....
Pontiac dlvy.	....	1,053	....
Total trucks	96	30,265	28,794
Cars, trucks	528	134,996	156,951
International:			
Trucks ...	268	11,724	5,993
Stude.-Pack.	....	6,772	6,940
All cars .	1,740	277,969	300,809
All trucks .	1,155	74,334	61,777
All vehicles	2,895	352,303	362,586
Last week	2,311	....	....
Last year .	4,584	....	....

*For 1957 models, Rambler is a separate make, no longer classed as Nash or Hudson.

Ontario Hydro 'Prospects' For New Steam Plant Sites

By CLIFFORD FOWKE

Steam: That's Ontario's immediate answer to an 11% spurt in power demand this year and still bigger needs over the horizon.

Despite 1.7 million kw of new power due from the St. Lawrence and other power projects by 1960, **Ontario Hydro** is "prospecting" for new power plant sites which will be needed soon after.

- Hydro is carrying out foundation tests at the Lakehead for a steam plant site.
- Hydro is collaborating with Hamilton's Harbor Commission on waterfront land extension for another steam plant.

It looks as if rising demand for power in southern Ontario will bring development emphasis to steam generating stations sooner than expected.

Three extra units now authorized for the Richard L. Hearn steam plant at Toronto, all 200,000-kw units, will bring the total capacity there by 1960-1961 to a million kw, against the 600 kw originally contemplated.

Final decision on building of the Hamilton plant is not expected to be made before 1958, but it has been visualized as a million kw steam plant with possibly greater capacity.

Early this year, Hydro Chairman Dr. Richard L. Hearn told Hamilton electrical engineers:

"As we turn to fuel-electric generation in the future, I'm sure you'll be interested to know that the most logical location for our next major steam station will be Hamilton."

A suggestion concerning the Lakehead plant, if and when Hydro decides to proceed with it, is that it will be fuelled with natural gas.

This week, Dr. Hearn told The Post:

"There are no definite plans yet for building a steam plant at Hamilton. It's a question of working in step with the Harbor Commission at Hamilton where the waterfront is uncompleted and where we presently have about 40 acres of land.

"The next site for a steam plant will likely be there, but our present plans for power expansions carry us up to 1960, and it could be 1958 before any final decisions on Hamilton were made.

Of the Lakehead area, he said:

"We are investigating sites in that area for a thermal plant in readiness for the time when we are going to need it. It is in our long-term planning."

Demand Beats Forecast

It seems that this summer's surge in power demand was much greater than Hydro anticipated. The demand jumped 14% in 1955 over 1954 and caused Hydro to go ahead last January with two additional 75,000-kw units at the Beck-Niagara Station No. 2 and one 200,000-kw unit at the Hearn steam station.

The Niagara pair are scheduled for completion in time to meet 1957 peak demand and the Toronto unit — the largest of its kind in Canada when authorized — is planned for service to meet the 1958 peak demand.

On the basis of the 1950-1955 rate of growth (8.5% per year as against 6.1% per year in the 1922-1955 period) these extensions would result in an estimated reserve in 1958 of 8% or about 358,000 kw.

But just a couple of weeks later came the announcement that a further two 75,000-kw units were authorized for the Beck-Niagara station, to complete that installation.

Then this month came the announcement of two further 200,000-kw units for the Hearn steam station — slated for operation in 1959 and 1960-61 respectively.

At that time, it was stated that already scheduled to augment the resources of the Southern Ontario system within the next four years was a total capacity of 1,290,000 kw from hydro-electric sources.

This represented the pumping-generating station and the four new units at the Beck-Niagara station plus the output from St. Lawrence power project.

But even at that, authorization for the additional two Hearn station units was needed immediately to allow for Ontario's continuing expansion.

Said Dr. Hearn:

"For many years, power demands grew at an equivalent rate of about 6% a year on the southern Ontario system. More recently, however, this rate has increased.

"During June last, it was more than 11% in excess of demands experienced in the same month last year. A similar situation existed during July and August."

A ceremony at Des Joachims last week signalled the approach of another source of electric power which Ontario is anxiously exploring. This was the 40,000-kw experimental nuclear power station NPD, scheduled for completion in mid-1959, and which is expected to be forerunner of a valuable new source of electrical energy.

PRICES

(See business trends, p. 2)

Canned fruit now coming on the market is almost universally higher-priced than last season due to poor crops. Here are Government legal minimum prices per ton for some bulk fruits (last year's figures in brackets): **Sweet Cherries,** white, $240 ($200), black, $260 ($220); **Grapes** $84 ($81.25); **Plums,** jam type, $57 ($50), damson, prune $67 ($61); Bartlett **Pears** $110 ($100); **Peaches,** Jubilee, $105 ($95), Alberta, $110 ($100), others $90 ($80).

Steel scrap dipped $2 ton for the frist time since the end of May, but dealers discounted suggestions of a weakening market, said price could possibly rise again before year's end. Drop was from the record $59 ton high to $57, still far removed from pre-strike May's $45 ton.

Auto price hikes for 1957 models are becoming known. Suggested list prices for Ford of Canada products are going to be up 4%.

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ANNOUNCEMENT

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Additional Issue

$10,000,000

George Weston Limited

4¾% Sinking Fund Debentures, Series B

Carrying warrants to purchase Class A Shares

To be dated October 15, 1956 — To mature October 15, 1971

Stock Purchase Warrants

The Series B Debentures when originally issued in definitive form will carry stock purchase warrants entitling the holders thereof to purchase 30 Class A Shares in the capital stock of the Company as now constituted for each $1,000 principal amount of Series B Debentures at the following prices:

$22.50 per Class A Share up to the close of business on October 15, 1960;

$25.00 per Class A Share on October 16, 1960 and thereafter and up to the close of business on October 15, 1963; and

$27.00 per Class A Share on October 16, 1963 and thereafter and up to the close of business on October 15, 1966.

Stock purchase warrants will expire at the close of business on October 15, 1966.

The Indenture providing for the issuance of stock purchase warrants will contain provisions for adjustment in the number of shares issuable in certain events.

Trustee: The Toronto General Trusts Corporation

In the opinion of Counsel these 4¾% Sinking Fund Debentures Series B will be investments in which the Canadian and British Insurance Companies Act states that a Company registered under Part III thereof may, without availing itself for that purpose of the provisions of subsection (4) of Section 63 of said Act, invest its funds.

We, as principals, offer these Series B Debentures, subject to prior sale and change in price, if, as and when issued and accepted by us and subject to the approval of all legal matters on our behalf by Messrs. Tory, Miller, Thomson, Hicks, Arnold & Sedgewick, Toronto, and on behalf of the Company by Messrs. Borden, Elliot, Kelley, Palmer & Sankey, Toronto.

Price 100 and accrued interest

It is expected that Debentures in interim form will be available for delivery on or about October 15, 1956.

A prospectus, a copy of which has been filed in accordance with the provisions of the Companies Act, Canada, will be furnished promptly upon request.

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Osler, Hammond & Nanton Limited — **R. A. Daly & Company** Limited — **Wills, Bickle & Co.**

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Yorkshire Securities Limited — **Eastern Securities Company** Limited — **Stanbury & Company** Limited

F. J. Brennan & Company Limited — **Okanagan Investments** Limited — **Walwyn, Fisher & Co.**

LABOR ROUNDUP

By JACK MacARTHUR

The Case for Long Contracts

More Information Needed to Guard Against Inflation

Considering its sudden spectacular popularity, economists, sociologists and the general public have shown remarkably little interest in the long-term labor-management contract and its many implications.

In most cases, the two-to-five-year contract has been hailed as a good thing because it means labor stability.

But it has been pointed out that inflationary dangers may lurk in its provision for regular annual wage hikes (FP, June 9, Sept. 22).

Commenting on the latter, a small Canadian industrialist—whose name is not given here but is known to The Post—outlines some of the thinking behind long-term contracts and expresses a reservation. He says:

"Over the past 15 or 16 years in Canada's industrial history there is a firm pattern . . . which has brought an average increase in industrial wages of about 6% per annum.

"During the same period the annual output . . . per industrial worker has increased in constant money value by about 4% per annum.

"Now, so long as output . . . per capita keeps increasing, industry can afford to split part of its profit growth with its labor partner. That is exactly what it has been doing.

"Big corporations in recent years, through the research work of their statisticians, have boldly assessed the future . . . and set up long-term contracts with reasonable assurance that the growth of automation will safely permit higher wage rates.

"Thus the much-feared (by some) increase in automation, which is steadily creating more goods and therefore more wealth per capita is actually the medium which guarantees that higher wages can and will be paid . . .

"The prime cause of inflation is when union demands outstrip the true rate of rise in per capita production.

"The most unfortunate aspect of the rate of rise of industrial wages is the fact that no attempt is made by either large private corporations or informed Government sources to (compile) the analytical data available so as to create an informative guide for all sides to study intelligently.

"We have the utmost need for an intelligent liaison between management and labor to anticipate properly what can be justifiably split between profits and wage increases . . ."

In other words, if we are going to have long-term contracts, let's be sure we have all relevant information. This will help prevent inflationary mistakes.

* * *

Unity Problems In Winnipeg

Labor unity has peculiar problems in Winnipeg. That's because it's three-sided instead of two.

In addition to former affiliates of the Trades and Labor Congress and Canadian Congress of Labor, a third group of unionists—once members of the One Big Union—is involved.

OBU had its own special tradition and characteristics. It was born at a Calgary conference in 1918, catapulted to sudden maturity in the great labor troubles a year later. Its members make up about 20% of the Winnipeg area's organized labor force.

Horsetrading between OBU and TLC and CCL affiliates has resulted in the most influential post in the united Winnipeg labor group going to OBU.

But OBU's identity is to be lost within two years.

This is a bitter pill for many who don't believe in international unionism. Before it's swallowed, there may be trouble.

But OBU leaders who favor merger know that failure to unite under the CLC banner will mean slow death to OBU, which would almost certainly disintegrate under raiding pressure from other unions.

* * *

A major project of organized labor in Winnipeg now is to pressure stores into selling union-made goods by persuading union members to buy only items produced in shops which are organized. Labor has never been very successful at this kind of thing in the past.

* * *

Labor Briefs

Seems as though the International Longshoremen's Association is on its way back into the AFL-CIO, following its expulsion a few years ago for unsavory waterfront connections. ILA was never kicked out in Canada, recently got the go-ahead from Canadian Labor Congress to organize Great Lakes waterfronts. It ended its dispute with Brotherhood of Railway Clerks (FP, Sept., 22) by agreeing to concede the latter a free hand in waterfront warehousing. In the U. S., it's said ILA has removed most of the reasons for its original expulsion by AFL, though some observers have doubts.

* * *

CLC has been asked to settle a jurisdictional fight between Seafarers International Union and Marine Engineers as it did with battles involving ILA and Railway Clerks and Teamsters and Brewery Workers in Winnipeg. SIU would like to take over the smaller Marine Engineers Union.

* * *

The Montreal convention of the Canadian and Catholic Confederation of Labor this week received indication that the Roman Catholic Church—with which it has been closely linked—does not oppose CCCL unity with Canadian Labor Congress. At midweek debate on the life-and-death question (FP, Sept. 22) was still to take place. CCCL has been losing members.

* * *

Labor continues to exert all possible pressure for integration of supplemental unemployment benefits (sometimes called layoff pay or the guaranteed annual wage) and unemployment insurance. There would be little point if a worker drew special SUB benefits and thereby disqualified himself for unemployment insurance. Labor wants both. CLC last week argued before Unemployment Insurance Commission that SUB was similar to payoffs from sickness or accident plans. Still the best bet: Integration eventually will be established.

* * *

Canada lost 87,710 man-days to strikes and lockouts during August, compared with 92,225 in August a year ago. To date: 959,875 lost days compared with 556,985 last year.

ANNOUNCEMENT

FREDERICK C. OAKES

Mr. Oakes was elected President of the Canadian Consumer Loan Association at the annual meeting held in Toronto, September 20th and 21st.

He is Public Relations Director of Household Finance Corporation of Canada.

As President of the Canadian Consumer Loan Association, Mr. Oakes represents an organization comprised of over 50 member companies which conduct more than ninety-five per cent of the business regulated by the Small Loans Act. This Association was formed in 1944 for the purpose of ensuring a high standard of service to the Canadian public.

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Idea May Give Nova Scotia New Pulp Industry

MONTREAL (Staff) — Establishment of a new pulp industry is looming as a possibility on Nova Scotia's economic horizon.

A new company, **Midland Pulp & Paper Mills Ltd.**, was incorporated earlier this month with the objective of establishing a semi-chemical pulp mill in the province utilizing hardwoods, especially poplar which has little commercial value at present.

R. A. Jodrey, Hantsport, N.S., one of the principals behind the new venture, told The Post that the project is currently in the "idea stage." Mr. Jodrey is the president of **Minas Basin Pulp & Power Co.**

Preliminary investigations into the feasibility of establishing a pulp mill have been carried out. Three possible mill sites are under consideration, though none has been chosen yet. With only three incorporating shares issued so far, the company has no capital funds as yet, Mr. Jodrey points out. However, several persons have indicated their willingness to put financial backing into the venture.

Commenting on a report that the new mill would cost in the vicinity of $3 million—a low figure as mills of this type generally go—Mr. Jodrey states that the company expects to be able to obtain used equipment, thus lowering costs considerably.

Montreal Short Position Up

MONTREAL (Staff) — Short position on the Montreal Stock Exchange totaled 6,484 shares in 20 issues as at Sept. 15, 1,669 shares and three issues higher than on August 31.

Among the significant changes were:

Stock	Shares	Stock	Shares
Abitibi	+425	Gt. Lakes	+175
B. A. Oil	+215	Int. Nickel	+200
Can. Cement	—100	McColl-F.	+200
Dom. Bridge	—300	Shawinigan A	+100
Dom. Steel & Coal	+175	St. Law. Corp	+500

Short position on the Canadian Stock Exchange at 67,250 shares in 25 issues as at September 15, decreased 12,000 shares and by seven issues from the position as at August 31.

Among the significant changes were:

Anglo Nfld.	—100	El Sol	—1,000
Bailey Sel. A	+300	Mtgary Exp.	+3,700
Belcher	—1,100	Pitt	—17,000
Ch. Jaculet	—1,650	Portage Is.	+3,500
C. Halliwell	—500	Que. Smelt.	+10,300
East. Asbestos	—500	Weedon	—1,000

Here is the actual MSE short position as at September 15.

Abitibi	1,025	Imperial Oil	175
Algoma	125	Int. Nickel	460
Aluminium	365	Massey-Harris	220
B. A. Oil	215	McColl-Front.	400
Con. M. & S.	325	Molson A	214
Dist. Seagrams	135	Noranda	500
Dom. Stl. & C.	175	Shawinigan	375
Famous Players	500	Do. A	100
Great Lakes	175	St. Law. Corp.	500
Gypsum	400	Steel Co.	100

Here is the actual CSE short position as at September 15.

Anacon	500	Merrill	1,000
Bailey Sel. A	300	Mtgary Exp.	6,500
Base Metals	5,500	N. Formaque	1,000
Beatrice	1,000	New Pacific	700
Bouzan	1,500	Opemisca Exp	1,000
Burnt Hill	100	Portage Isl.	3,500
Chib. Jaculet	275	Preston E. D.	500
Cons. Paper	575	Que. Chib.	17,100
Eastern Asb.	8,500	Que. Copper	600
El Pen-Rey	1,000	Que. Smelt.	10,300
Falconbridge	100	Sherritt Gordon	600
Kilembe Cop.	1,000	Virginia	2,100
Mackeno	2,000		

Future Gloomy For Quebec Syndicates

MONTREAL (Staff)—The leaders met with the rank-and-file of the 96,296-member Canadian and Catholic Confederation of Labor in Montreal's Windsor Hotel this week. Main topic: Why there are only 96,296 members.

That number means a 4,000 drop in three years. And all signs indicate the slide is still in full swing.

Union members had little to feel pleased about as they gathered in annual convention. The last year has seen them fighting a rearguard action against raiding by the powerful international unions. A strong body of members this week seemed ready to admit defeat and were looking for the best possible terms of surrender. Surrender, in this case, means tying up in some way with the million-member Canadian Labor Congress.

At preliminary merger discussions held in Ottawa and Montreal, it is understood the primary demand of CCCL was that it should maintain its French-Canadian identity whatever else might be asked of it.

The inevitable suggestion that the word Catholic be dropped from the title met substantial support this week.

No one suggested the mere dropping of a name from the title would be important, in itself. But to Quebec labor observers such a trend is considered significant. It was followed later in the meetings by a second move: Members prepared a resolution which, if it gets the support of other Quebec labor organizations, will lead to an annual brief being submitted to provincial authorities to urge adapting the school system to the "needs of today."

This was taken to indicate a sharp reversal of the old, more insular, approach by CCCL to Quebec education.

This, and other moves, are intended as the prelude to a hard-hitting recruiting campaign to bring back straying members. The big question, yet to be answered: Is this too little, too late?

The international unions, naturally, were not at the convention, but their presence on the sidelines gave an atmosphere of urgency to the proceedings.

Approximate Quotes
SUPERVISED FUNDS

	Bid	Asked
Supervised Income Fund	$ 4.29	$ 4.33xd
" Growth Fund	1.99	2.01
" American Fund	6.10	6.16xd
(1955) Executive Fund	35.86	
(1956) Executive Fund	29.43	30.78

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Steel Union Loses Grip, Inglis Workers Wildcat

Two labor situations which got out of control were in different stages this week.

At three plants (in Toronto, suburban Toronto and St. Catharines) owned by **John Inglis Co.** and **English Electric Co.**, some 2,000 members of Steelworkers' Union pulled an illegal wildcat strike just as a conciliation board was to begin hearings on a bitter contract dispute.

At the Toronto plant of **Ferranti Electric**, a 4½-month-old strike ended when the company and Communist-line United Electrical Workers reached an agreement — which didn't do much for union prestige.

A lot of factors were involved in the Inglis walkout. Steelworkers Union, usually pretty tough on wildcat strikers, apparently was unable to control its members. In fact, the strike was obviously well organized.

Existence of a substantial Communist group among the workers didn't help things.

Too, there was resentment in the union that the company didn't kick in with a big wage boost following two consecutive no-increase contracts. Inglis feels, however, that the no-increase contracts were a result of higher-than-average wage level to start with.

Also important is the argument over what is called CWS — a detailed job evaluation scheme demanded by Steelworkers.

Steelworkers have been pushing for CWS in Canadian basic steel and other industries this year with good success.

But Inglis has its own set-up which puts far more emphasis on skill and far less on responsibility than does CWS. Any switch from the Inglis plan to CWS would cause a major upheaval in wage schedules.

Inglis has offered a 2½-year contract with wage increases of 7c hr. the first year, 5c the second, 3c the last half. The Union wants something closer to 45c hr.

These are the circumstances which led to the wildcat strikes. It was obvious at midweek that any attempt by Steelworkers' National leadership to win back control of the situation would require a lot of delicate footwork.

UE almost certainly never anticipated a long costly strike at Ferranti.

To get settlement, UE conceded to the company the right to make certain short-term layoffs without being governed by strict seniority provisions; made some concessions on the incentives system; the company now will have a cutoff period after which laid-off employees are stricken from the seniority list.

The new contract is for three years, gives 7c hr. increase now, 2% more in a year, 2.5% more two years from now. A company pension plan will begin a year from now, as will company payment of the employees share of the welfare plan.

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For Pure Pleasure ...HAVE A Player's "MILD"

THE MILDEST BEST-TASTING CIGARETTE

Retail sales in GREATER MONTREAL MARKET are 3 TIMES BIGGER than Quebec, Three Rivers, Sherbrooke COMBINED

	RETAIL SALES	% OF PROVINCE
GREATER MONTREAL MARKET	$1,724,583,000	59.1
Quebec, Three Rivers and Sherbrooke markets ALL TOGETHER	$560,114,000	19.2

From whatever angle we look at it, Greater Montreal market stands way above the balance of the province in living expenditures, annual turnover as well as per capita retail sales.

No wonder more and more agency executives are concentrating in La Presse in order to get more sales at lower cost in French Canada.

LA PRESSE
One advertising dollar in Greater Montreal is worth any two outside.

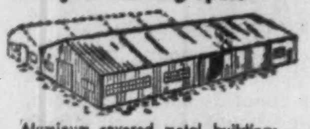
ANNOUNCEMENT

J. G. HAXTON

Montreal Trust Company announces the appointment of James G. Haxton as Manager at Toronto, succeeding the late R. K. Johnston. Mr. Haxton was formerly Assistant Manager of the Toronto Office.

MULTIPLY

your working space



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ANNOUNCING

Important appointments in Canadian Industry, Finance, Business and Government.

Thomas Adams Distillers Ltd. (Amherstburg, Ont.) — John J. Baker, Ontario sales manager, succeeding Sam Newman, retired; H. W. Haigh, assistant Ontario sales manager.

Alberta Distillers Ltd. (Calgary) — W. C. Mainwaring, vice-pres. and assistant to the president, B. C. Electric Co., Vancouver, etc., director.

Alberta Meat Co. (Vancouver)—E. H. Budd, general sales manager, Puritan Canned Meat Division.

Canadian Bank of Commerce (Toronto)—Robert B. Anderson of New York, president of Ventures Ltd. etc., a director.

Close Bros. Ltd. (London, Eng.)—A. J. Shepley, investment and trustee manager, Toronto office.

Consolidated Toronto Development Corp. (Toronto)—R. J. MacNeill, in charge mineral development activities.

Dominion Bridge Co. (Lachine, Montreal) — W. A. Bentley, sales manager, Ontario Division.

Dominion Chartered Customs House Brokers Association, Montreal Division, Montreal — B. Horwitz, Bensol Customs Brokers Ltd., president; Jacques Racine, C. E. Racine & Co., vice-president; H. F. Kerrin, Kerrin. Egan, Freeman Co., treasurer; J. O. Stratton, Affiliated Customs Brokers (Montreal) Ltd., ex-officio; A. R. Bergevin, P. H. Bernard, E. P. Blair, M. Nemtin, J. A. Nuttall, I. Reid, R. Shorrock, H. A. Vailieres, directors.

Empire Brass Mfg. Co. (London, Ont.) — John M. Todd, branch manager and W. Kenneth Duffin, assistant manager, Edmonton; Norman W. Mealing, manager, and E. J. Chernis, assistant manager, Ottawa.

Evergreen Press Ltd. (Vancouver)—newly formed company merging Lumberman Printing Co. and Wrigley Printing Co. and including acquisition of plant and equipment of Sunprinting; G. D. Clippingdale, president; G. C. Hyatt, executive vice-president; J. S. McCracken, sales manager.

CHARLES H. DODSON

formerly assistant general manager (sales) of Texas Company's domestic sales department, has been elected president and a director of Regent Refining (Canada) Ltd.

Executive Placement Services Montreal)—subsidiary division of Leetham, Simpson Ltd.; Brigadier C. Wallis in charge new division.

Inland Cement Co. (Edmonton) — William S. Ziegler, executive vice pres.

International Iron & Metal Co. (Hamilton)—Patrick O'Henaghan, joins sales staff.

Kraft Foods Ltd. (Montreal)—B. D. Thornton, product sales manager, confections for Canada, at Montreal; R. J. Greenwood, Toronto branch manager.

Minneapolis - Honeywell Regulator Co. (Toronto)—Keith Warne, advertising manager; A. W. Babcock, administrative assistant to C. A. Anderson, manager Aeronautical Division.

Montreal Trust Co. (Montreal)—J. G. Haxton, manager Toronto, succeeding the late R. K. Johnston.

National Fraternal Congress of America (Cleveland, Ohio)—Lou E. Probst, supreme chief ranger, Independent Order of Foresters, Toronto, president.

Regent Refining (Canada) Ltd. (Toronto)—Reuben Rosefield, chairman; Charles H. Dodson, president and director; Marion J. Epley, Jr., general attorney, Texas Co. in New York, director.

James Richardson & Sons (Winnipeg)—L. L. Bell, general supervisor, bond department (all-Canada,) resident Toronto; Sydney C. Stephens, assistant supervisor, bond department (western), resident Winnipeg; F. N. Hughes, supervisor, Ontario retail offices.

Royal Trust Co. (Montreal)—Ernest R. Jones, western supervisor, pension trusts headquarters Vancouver.

Singer Manufacturing Co. Thurso Works (Thurso, Que.) — Philippe Desforges in charge sales and purchases, all forest products; George Morris, works engineer; Frank Mohney, plant superintendent; Marcel Bellefeuille, assistant works manager, production.

Steinberg's Ltd. (Montreal) — Sydney Kom, director of development (warehousing and processing); Z. M. Ferley, plant operations manager (Hochelaga.)

Stokely-Van Camp of Canada Ltd. (Essex, Ont.) — Keith Agnew, president and general manager.

Sun-Canadian Pipe Line Co. (Waterdown, Ont.)—W. T. Askew, president Sun Oil Co., a director, John C. Agnew, director and treasurer, to be secretary, J. B. Moffett, secretary and director, resigned.

Sunshine Waterloo Co. (Waterloo, Ont.)—A. M. Snider, of Waterloo, Ont., president; M. F. Verity, Brantford, and A. A. Thornbrough, Toronto, directors.

Toronto General Trusts Corp. (Toronto) — Fred R. Cooper, succession duty officer.

Businessmen Declare War On Trading Stamps In B.C.

From Our Own Correspondent

VANCOUVER — Seven major business organizations and seven leading food department stores and chains have declared war on trading stamps.

Declaring that trading stamps are "bad for the retailer and customer," the groups have banded together in a united front in an attempt to stiffen the Criminal Code of Canada to prevent their distribution.

Spokesman for the 14 stated they were in complete agreement following a meeting called by the Retail Merchants' Association, B. C. Division, whose national body has been attacking trading stamps since June.

"The Criminal Code needs some tightening up," said Chris Boulton, RMA manager. "The intent of the law is clear, but a few conditions allow big trading stamp dealers to come into the country and make a fortune."

Trading stamps are distributed by retailers in some Eastern Canadian cities and are a multi-million dollar business in the United States, but none are being distributed west of the Lakehead.

Last week a representative of one of the largest American firms visited Vancouver, but left without making any definite moves other than to engage a firm of lawyers to survey the B. C. situation.

Mr. Boulton said, "Our job is not only to keep these gimmicks out of B. C. To have any effect, they must be outlawed nationally."

Attending the meeting were the RMA, the Board of Trade, the Downtown Business Association, the Better Business Bureau, the Automotive Retail Association, the Canadian Retail Hardware Association and the Hastings Chamber of Commerce.

Department stores represented were **Woodwards, Eaton's,** and **Hudson's Bay.** Representatives of these chain stores also attended: **Cunningham Drugs Ltd., Canada Safeway Ltd., Super Valu Stores Ltd.** and **Shop Easy.**

The group objected to trading stamps because:

—They are "an unnecessary and expensive promotion",

—They add to the price of merchandise by two per cent and "therefore cause an undesirable rise in the cost of living";

—They disrupt the flow of business from manufacturer to wholesaler and to retailer to consumer;

—They do not increase the retailer's profits and are a blatant means of making money for the stamp promoter;

—They increase the retailer's "cost of doing business, make a great deal of additional work, and obscure the true function of merchandising — to offer the very best products at the lowest possible cost."

Coming Events

Coming events of national interest and importance, brought to the attention of Post editors, will be included in this monthly column.

OCTOBER

1-3—Institute of Radio Engineers, Trade Show, automotive building, CNE Park, Toronto.
1-3—Ship by Rail Association of Ontario, Royal York Hotel, Toronto.
1-3—Tea and Coffee Association of Canada Convention, Seigniory Club, Montebello, Que.
1-3—National Sessions, Real Estate Boards, Halifax, N.S.
2-4—Canadian Good Roads Association, Chateau Frontenac, Quebec City.
2-5—B.C. Division, Canadian Medical Association, Victoria.
2-5—Canadian Association of Administrators of Labor Legislation, Fredericton, N.B.
3-5—Union of B.C. Municipalities, Penticton, B.C.
3-5—Canadian Electrical Mnfrs. Assoc., Niagara Falls, Ont.
7-10—Canadian Shoe and Leather Fair, Montreal.
7-11—Association of School Business Officials of the U.S. and Canada, annual Convention, Sheraton-Park Hotel, Washington, D.C.
8-10—Canadian Division. Master Photo Dealers and Finishers Association, Royal York Hotel, Toronto.
8-11—National States Conference on Alcoholism, Royal York Hotel, Toronto.
8-12—Canadian Medical Assoc., Saskatchewan Division, Saskatoon.
9-11—Manitoba Hotel Association, Winnipeg.
9-12—National Gift Show, automotive building, CNE Park, Toronto.
10-11—Central Canada Broadcasters Association, Engineering Division, Seaway Hotel, Toronto.
11-13—International Typographic Composition Association, Royal York Hotel, Toronto.
11-13—New York State and Canada Conclave of Magicians, Royal York Hotel, Toronto.
12-13—International Association of Electrical Inspectors, Canadian Section, King Edward-Sheraton Hotel, Toronto.
12-13—National Council of Canadian Labor, King Edward-Sheraton Hotel, Toronto.
14—Customs and Excise Officers Assoc., Ottawa.
15-16—Quebec Union of County Councils, Sherbrooke.
15-16—Maritime Branch, Canadian Section, AWWA, Admiral Beatty Hotel, Saint John, N.B.
15-17—Retail Merchants Association of Canada (Ontario), Food Division, Royal York Hotel, Toronto.
15-17—Canadian Assoc. of Ice Industries Ste. Adele, Que.
15-18—Canadian Chamber of Commerce annual meeting, Quebec City.
15-19—Registered Nurses Association of Ontario, Conference on Improving the Quality of Nursing Care, Sunnybrook Hospital, Toronto.
16—Canadian Display Designers and Builders' Association annual fall convention, King Edward Hotel, Toronto.
16-18—Associated Hospitals of Alberta, Edmonton.
16-19—National Council of the Y.W.C.A. of Canada, Toronto.
17-19—Ontario Association of Plumbing Inspectors and Affiliates, Guild Inn, Toronto.
17-19—Ontario Insurance Agents' Association, Royal York Hotel, Toronto.
18—Canadian Association of Advertising Agencies, King Edward-Sheraton Hotel, Toronto.
18-19—Business Paper Editors' Association, National Editorial Conference, Royal York Hotel, Toronto.
18-19—Canadian Independent Telephone Association, Royal York Hotel, Toronto.
18-20—Society of Industrial Cost Accountants of Ontario, Prince Edward Hotel, Windsor, Ont.
19-21—Business and Professional Women's Clubs of Ontario, King Edward-Sheraton Hotel, Toronto.
20-23—Public School Trustees Ass'n of Ontario, Sault Ste. Marie, Ont.
22-24—Ontario Hospital Association. Royal York Hotel, Toronto.
22-27—Ottawa Winter Fair, Ottawa, Ont.
24-26—National Dairy Council of Canada, Chateau Frontenac, Quebec City.
25-26—Catholic Hospital Association, Ontario Conference, St. Joseph's Hospital, Toronto.
25-26—Certified Public Accountants Association of Ontario, Royal York Hotel, Toronto.
25-26—Navy League of Canada, National Council, Royal York Hotel, Toronto.
25-26—Union of Alberta Municipalities, Lethbridge.
26-27—Canadian Council of Foremen's Clubs, Royal York Hotel, Toronto.
27—Certified General Accountants' Association of British Columbia, Convention, Hotel Vancouver, Vancouver.
27-30—Canadian Association of Occupational Therapy, Montreal.
27-Nov. 3—Maritime Winter Fair, Amherst, N.S.
28-31—Community Planning Association of Canada, Chateau Laurier, Ottawa.
29-30—Ontario Progressive Conservative Association, Royal York Hotel, Toronto.
29-31—Canadian Institute on Sewage and Sanitation, Prince Edward Hotel, Windsor, Ont.
29-31—Canadian Technical Asphalt Association, Macdonald Hotel, Edmonton.
29-31—Air Industries & Transport Assoc. of Canada, Quebec. Que.
30-Nov. 1—Chicago Claim Conference & Eastern Claim Conference, Royal York Hotel, Toronto.

Why Lily Pons reads The Reader's Digest

"Because a singer tries to communicate emotions, she needs more than technique and good vocal chords; she must also be deeply sensitive to human beings. Besides the sheer reading pleasure I find in the Digest (on trains, on planes, at home, between rehearsals!) it brings me happy insights into my fellow humans—and so into myself."

Lily Pons, famous star of opera and concert

In October Reader's Digest don't miss:

YOUR BRAIN HAS HIDDEN POWERS: Do you know that your brain *cannot* tire no matter how hard you work it . . . that age need not prevent learning . . . that exercise improves the brain . . . that you can train *your* brain to remember names and faces? Here are seven important facts turned up by recent research to help you think more clearly, improve your memory.

TRADING STAMPS—BONUS OR BUNKUM? The trading stamp mania is back. How much of their cost is included in the price you pay? Here is evidence that free "gifts" are not all free—and hints to help you stretch your shopping dollar.

HOW TO SHARPEN YOUR JUDGMENT: Everyone sometimes jumps to the wrong conclusions—but just a few simple rules will keep you from forming foolish opinions. Nobel Prize winner Bertrand Russell offers six suggestions to help you sharpen your judgment.

HOW'S YOUR SENSE OF HUMOR? Does a good sense of humor mean you're smarter than others? What if you have trouble remembering jokes? Here's how your sense of humor reveals more about you than you realize.

HOW WE TURN KIDS INTO CRIMINALS: Dr. Ruth Alexander tells why "the only way to cure juvenile delinquency is to punish first offenders, and stop coddling them."

I THINK YOU'RE WONDERFUL! Why affection isn't much good unless *expressed* . . . and why locked up feelings eventually wither and die.

COLLEGE TWO YEARS SOONER: Is a bright 10th-grade boy ready for college? Here's how an extensive experiment proved younger students *could* adjust to college living.

20-PAGE BOOK CONDENSATION: "High, Wide and Lonesome"; boyhood adventures on the prairie . . . and a family's fight against drought, blizzards, rattlesnakes, marauding cattle.

MY LAST BEST DAYS ON EARTH: How a cancer victim determined to make her remaining time "the most wonderful of her life."

There are 43 articles of lasting interest in the October issue of

Reader's Digest

CANADA'S MOST WANTED MAGAZINE

In Canada, Reader's Digest is bought by more people, at every income and occupation level, than any other magazine. (1956 average — over 900,000 copies a month — the only publication covering both English and French markets.)

Additional Issue

$2,000,000

SHERATON LIMITED

(Incorporated under the laws of Canada)

General Mortgage Sinking Fund Bonds, 5½% Series "B".

To be dated October 1, 1956 — To mature November 1, 1970

Principal and half-yearly interest (May 1 and November 1) and redemption premium, if any, payable in lawful money of Canada at any branch of the Company's bankers in Canada, the first interest payment date to be May 1, 1957 in respect of the seven months period ending on that date. Coupon Bonds in the denominations of $500 and $1,000 registerable as to principal only.

The Company will covenant to provide for the exclusive benefit of the Series "B" Bonds a sinking fund commencing October 1, 1957, and annually on October 1st thereafter up to and including October 1, 1969, sufficient to retire $100,000 principal amount of the Bonds. The Company will have the right to purchase Series "B" Bonds in the market or by tender or by private contract and tender the same to the Trustee in satisfaction in whole or in part of its obligations.

Trustee: General Trust of Canada.

In the opinion of Counsel, these Bonds will be investments in which the Canadian and British Insurance Companies Act states that companies registered under Part III thereof may, without availing themselves for that purpose of the provisions of subsection (4) of Section 63 of said Act, invest their funds.

We, as principals, offer the General Mortgage Sinking Fund Bonds, 5½% Series "B", if, as and when issued and accepted by us and subject to the approval of all legal matters on behalf of the Company by Messrs. Hugessen, Macklaier, Chisholm, Smith & Davis, Montreal, and on our behalf by Messrs. McMichael, Common, Howard, Cate, Ogilvy & Bishop, Montreal, who will rely upon the opinion of Messrs. Tory, Miller, Thomson, Hicks, Arnold & Sedgewick, Toronto, in respect of the incorporation and organization of the Company, the title to the properties of the Company in Ontario and all matters of local law therein.

Price: 100 and accrued interest

It is expected that interim or definitive Bonds will be available for delivery in Montreal and Toronto on or about October 5, 1956.

A copy of the prospectus filed under the provisions of the Companies Acts, will be promptly furnished on request.

René T. Leclerc Incorporée

W. C. Pitfield & Company Limited — Nesbitt, Thomson & Company Limited — McLeod, Young, Weir & Company Limited

Books For Businessmen

FRASER'S CANADIAN TRADE DIRECTORY, 43rd edition, Published by Fraser's Trade Directories Ltd., 1520 Mountain St., Montreal — $6.

From abattoir equipment to zirconium (ferro), the products of 11,500 Canadian manufacturers are listed in this directory under 6,500 classified headings.

The new edition contains 330 new headings and is 64 pages larger, bringing the total pages to 1,784. Among the sections, conveniently printed on different colored pages, are alphabetical lists of 15,000 trade names and 10,000 foreign companies and their Canadian representatives.

Wholesalers, distributors and agents are listed as well as manufacturers, and the market section includes lists of transport companies, utilities, banks, telephone companies and population figures.

NATIONAL INCOME and Expenditure, 1956; H. M. Stationery Office, $1.16 post paid from United Kingdom Information Services, Montreal, Ottawa, Toronto.

Britain's gross national product has risen from £5.1 billion in 1938 to £16.7 billion in 1955. Estimates of the national product, income and expenditure for 1938 and for the years 1946-1955 are contained in this publication prepared by the Central Statistical Office.

While gross national product during the 17-year period rose 224%, consumers' expenditure generating it rose 190% and public authorities' current expenditure on goods and services rose 313%.

Among the shares in the gross national product, net income from abroad totaled £192 million in 1938, £44 million in 1946, £337 million in 1950 and £145 million last year.

$1,500,000

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LIMITED

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(par value $100.00 per share)

Price: $100 per Preference Share plus bonus of 2 Common Shares to yield 6%

$500,000

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Convertible into Common Shares at various rates at any time before September 1, 1966.

Price: $100 per Preference Share plus bonus of 2 Common Shares to yield 6.25%

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Motor Products Corporation of Canada Limited is one of the leading suppliers of automobile parts in Canada today. Formerly the Canadian Division of a major United States supplier to the giant automotive industry, the business dates back over 40 years when it commenced at Walkerville, Ontario. The broad line of automobile parts that is produced by Motor Products Corporation of Canada Limited includes safety glass, ventilating windows, window operating mechanisms, glass channels, metal stampings, rolled body mouldings and tubing, interior garnish mouldings and many other functional and decorative parts. It also specializes in metal finishing, painting, nickel and chrome plating and zinc plating. Motor Products is one of the only two Canadian manufacturers of laminated safety glass used in all automobiles.

Both these Preference share issues are preferred as to capital and dividends over the Common shares and are redeemable at $105.00 per share. The bonus of two Common shares accompanying each Preference share provides an opportunity for capital appreciation and possible additional future income.

The right is reserved to reject any or all applications and in any case to award a smaller amount than applied for.

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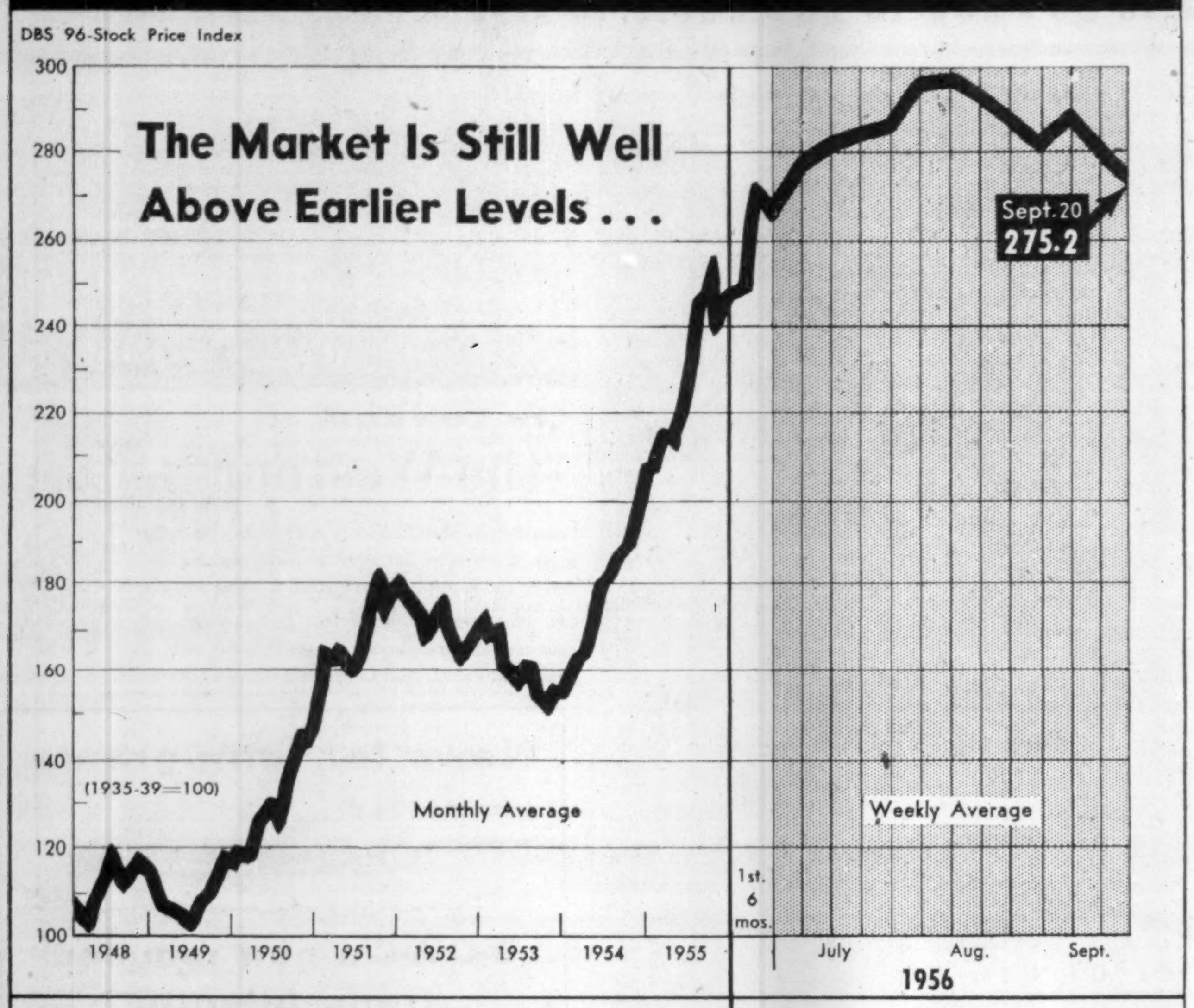
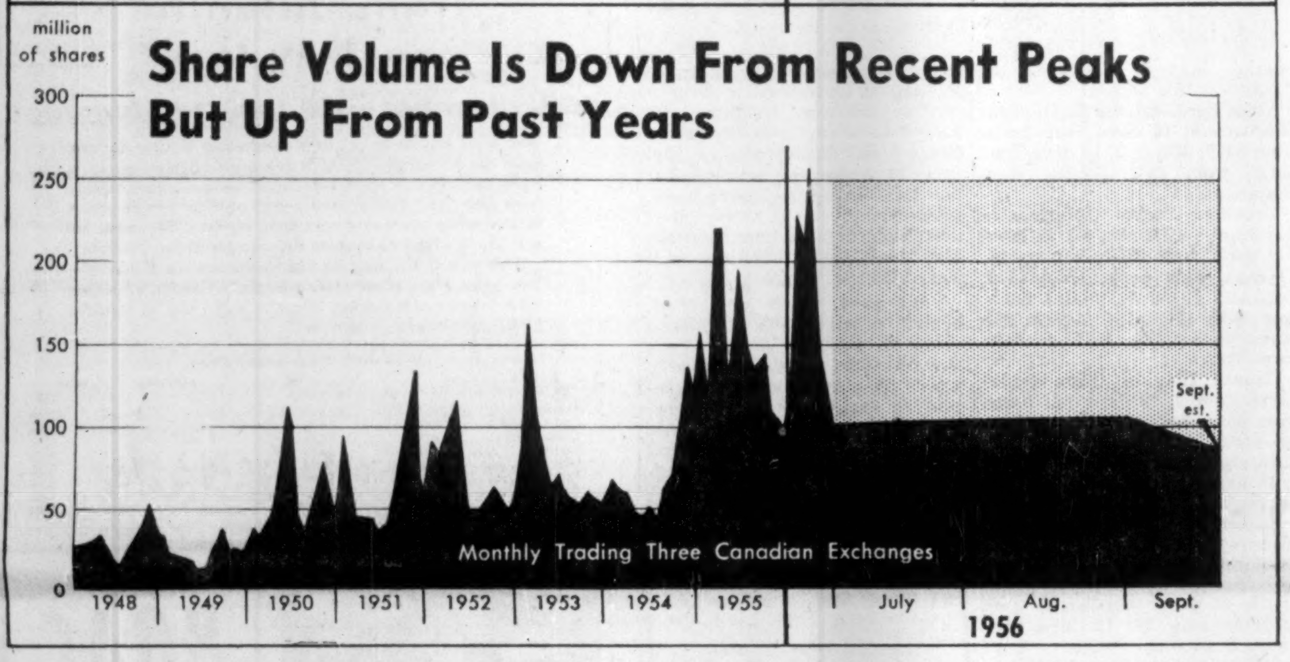
FP

How Serious Is The Market Drop?





Small Lenders Have Last Word As New Loans Act Becomes Law

This summer Canada's small loan companies fought long and hard to keep the Federal Government from scaling down the interest rates charged for "on your signature" loans.

This week — although the battle is over and lower rates go into effect Jan. 1 — the small loan companies fired a last salvo.

"In view of the unrealistic rates established by Bill 51, a substantial number of Canadians will be deprived of any legitimate source of cash."

So says a letter to federal cabinet members signed by the Canadian Consumer Loan Association, representing companies doing some 95% of consumer installment loan business.

Changes in the Small Loans Act will bring under federal regulation all loans up to $1,500. Previously only to loans up to $500 came under the Act. Maximum interest charges have been lowered and put on a new sliding scale in which, in effect, the larger the loan, the smaller the charges (FP, Feb. 25, Aug. 11).

When revised rates were first being discussed, the lending companies maintained that lower interest charges would (1) force some legitimate lenders to the wall; (2) dry up easily available loans; (3) push unsuccessful would-be borrowers into the arms of loan sharks.

Avoid Large Loans

Now that the legislation is law, small loan companies are reiterating their contentions — and implying that the intent of the legislation may be circumvented. Lower rates and lower profits, the lenders say, will force them to:

—Be more selective about risks taken.

—Avoid making large loans.

For a large number of Canadians, say the companies, this means no more cash loans from government - licensed lenders. Consumer loan service across Canada will be reduced. And in some areas, lenders — smaller ones with higher overhead — will go out of business.

For the borrower in search of a loan larger than, perhaps, $500, the companies' policy may be to turn it down. Since the larger the loan, the lower the interest that can be charged, companies are likely to try to make small loans as often as possible.

For example, under the new rates a $1,200 loan for 12 months will bring lenders a return 30% lower than under existing rates. But return on a $300 loan is the same under the new rates as under the old. This means that if lenders can find reasons for refusing requests for large loans and manage to encourage more small loans instead, profit margins can be kept from narrowing.

MARKET COMMENT

The informed opinion of men experienced in market analysis is given regularly in this investment feature. For profit add their viewpoint to yours. You get them in

THE FINANCIAL POST

Yearly by mail in Canada, $6; elsewhere $7 yearly.

People often say as reliable as a—

but few products are more reliable than an—

Photograph of a 50-ton overhead iced refrigerator car, similar to those of an order of 200 now being delivered to the Canadian National Railways.

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Loaded, unloaded . . . carrying thousands of tons of essential goods from one end of Canada to the other . . . year after year, facing every extreme of weather . . . we wish to nominate the overhead iced refrigerator car as still another outstanding example of reliability. Reliability built into all National Steel Car rolling stock by a combination of skilled craftsmanship, the most modern of production techniques and an experienced management devoted to building rolling stock of the finest quality at the lowest possible cost.

Deductible Health Insurance Will Save Catastrophe Bills

Great-West Life Assurance Co. put on the market this week a new comprehensive group health insurance plan designed to offset the costs of serious illness where expenses assume abnormal proportions.

Based on the catastrophe approach to health insurance, the plan includes a deductible, as in auto insurance, and a co-insurance feature whereby company and employee share costs above the deductible.

Unlike the more usual plan where members are reimbursed fully up to a specified limit, this plan has the policyholder pick up the tab for smaller illnesses and thus let premium payments accumulate to pay for the larger or more catastrophic illnesses which would take him beyond the limit set by conventional plans.

Great-West's comprehensive plan is the first serious attempt to market health insurance based on deductibles and co-insurance methods. Until now, conventional reimbursement or service plans were the rule and deductible plans with very high ceilings were tailor-made on order only.

The success of this plan, say insurance men, will in large part indicate whether or not the trend of tomorrow's health insurance coverage will be toward catastrophe cover which ignores small payments or toward a widening of benefits in ordinary service plans which contain no deductible.

What some regard as a prime example of wide-benefit service plans was introduced recently by **A. V. Roe Canada Ltd.** (FP July 28) and was also underwritten by Great-West Life.

$10,000 Protection

A prototype of the comprehensive plan was developed by Great-West last year for **Shawinigan Water & Power Co.** (FP May 19). A favorable operating experience during its first year encouraged Great-West to extend its principles to smaller organizations, say company officials.

The new plan can provide up to $5,000 or $10,000 protection depending on the size of the group against the costs of sickness. It is to be offered to firms with 25 or more employees.

Under the plan, two basic types of deductibles will be available depending upon the desires of the group insured. There is a $25 deductible (or $50 deductible) scheme whereby the insured employee pays the first $25 (or $50) himself for each illness's expenses. Or there is a calendar year deductible of $25 (or $50) whereby the employee pays the first $25 (or $50) for the expenses of the first illness in any one year and then further illnesses involve no deductible.

After the deductible has been paid, the residue of the bill is shared by the employee and the insuring company with the employee paying 25% and the insurance company 75%. Top limit would be $5,000 or $10,000 per illness depending on the group insured.

Extensive Benefits

Benefits under the comprehensive plan are extensive. These costs may be charged against the scheme: ambulance services, x-ray and radium treatments, services of nurses in or out of hospitals, physiotherapy, blood transfusions, diagnostic laboratory procedures, anesthetics, oxygen, rental of special equipment such as iron lungs, drugs dispensed by licensed pharmacists, hospital room and board, all medical and surgical bills including home calls by a doctor.

Premium to be paid by employees for this plan will vary depending upon the characteristics of the group insured. Whether there would be any employer assistance in paying premiums would be a matter for internal company arrangements.

• Glamour has quite an effect on the price of so-called growth stocks but we confess we can't measure glamour very accurately. However, if it's basic facts about a stock you want—details of management, assets, present earnings power and reasonably projected outlook, we should be able to help you—if you ask us.

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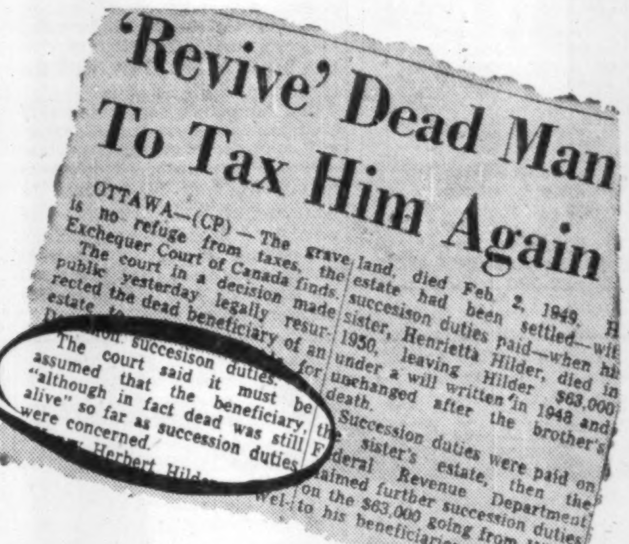
don't let this happen in your will!



'Revive' Dead Man To Tax Him Again

OTTAWA—(CP)—The grave is no refuge from taxes, the Exchequer Court of Canada finds.

The court in a decision made public yesterday legally resurrected the dead beneficiary of an estate to ... Dominion succesison duties.

The court said it must be assumed that the beneficiary, "although in fact dead was still alive" so far as succession duties were concerned.

... Herbert Hilder ... land, died Feb. 2, 1949. His estate had been settled—with succesison duties paid—when his sister, Henrietta Hilder, died in 1950, leaving Hilder $63,000 under a will written in 1948 and unchanged after the brother's death.

Succession duties were paid on the sister's estate, then the Federal Revenue Department claimed further succession duties on the $63,000 going from Hilder to his beneficiaries.

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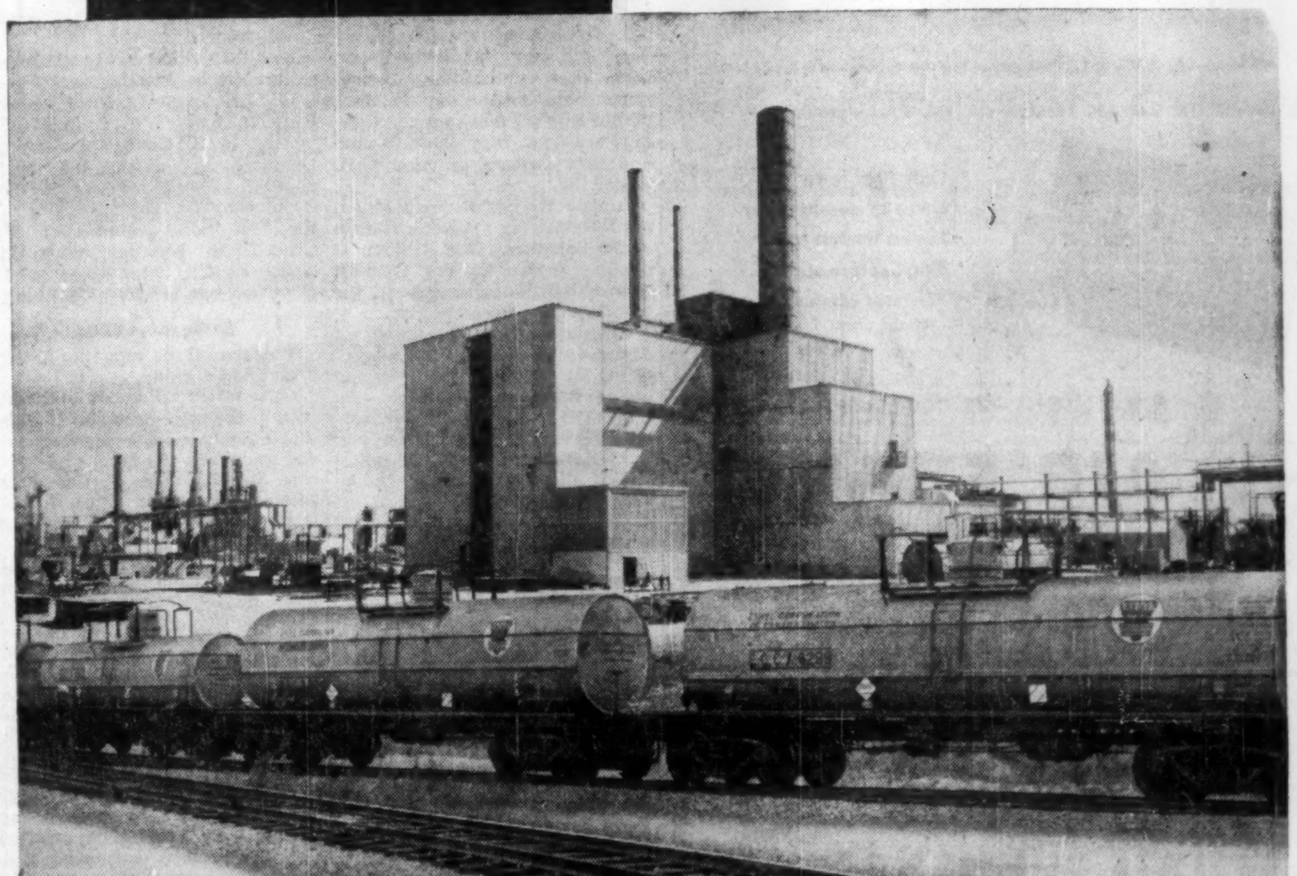

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New Cunarders Will Give Fast, Luxury Service

The **Cunard Line** will provide a new fast luxury liner service for 1957. There will be three sailings a month from Montreal to Havre and Southampton.

The new service will be maintained by the recently introduced 22,000-ton Cunarders Saxonia and Invernia and will start with the Saxonia's June 7 sailing from Montreal.

This means that when the 22,000-ton passenger vessel Sylvania — newest and fourth Cunarder specially built for the Canadian trade — enters the service next June, the Cunard Line will have two big luxury liners sailing regularly from Montreal to Liverpool with frequent calls at Greenock on the Clyde and two sister ships maintaining a regular schedule from Montreal to Havre and Southampton.

The new Sylvania will sail from Liverpool, June 5, on her maiden voyage to Montreal. Her debut will mark completion of Cunard's 88,000-ton shipbuilding program for its Canadian service that began in Feb., 1954, with the launching of the Saxonia.

The company's augmented 1957 eastbound schedule from Montreal will comprise 12 sailings to Liverpool via Greenock; 10 direct to Liverpool; and 20 sailings to Southampton via Havre. The westbound schedule will include 12 sailings direct to Montreal from Liverpool; 11 from Liverpool via Greenock and 19 from Southampton via Havre.

POST TRAVEL BUREAU
Where to go - how to go - where to stay

Caribbean Isles Offer Sun, Surf, Luxury Vacation

Every month more Canadians are discovering the delicious sensation of relaxing in the tropical, warm sunshine of the Caribbean community — the West Indies, Central America and northern South America. In recent years this area has emerged as one of the world's most popular playgrounds and for the West Indies in particular, the increase of tourism has led to economic and cultural renaissance as well as political maturity.

Sun and surf are the natural assets, but the Caribbean has much more than these to offer. Perhaps its most delightful characteristics are variety and contrast.

Here the history of the New World began and there are many reminders of the days of discovery, conquest and piracy. But beside the ruins of old forts and castles stand modern de luxe hotels, sprawling new villas, and on the mainland, some of the most modern highways and office buildings in the world. The contrast of old and new is striking.

Once the battlefields of European powers, who swarmed to the New World to share in its reputed wealth, the islands and mainland communities were added to great colonial empires. Although there are now many independent states, the influence of European customs, language and architecture is still strong. And a variety of old-world cultures is seen in the areas colonized by Spain, Britain, France and Holland.

Racially, the West Indies are predominantly African—descendants of the slaves who were brought to work in the sugar fields. Here graceful native dances and sounds of voodoo drums contrast sharply with European cultures.

Leisurely Voyage

Perhaps the best way to appreciate the contrasts of the Caribbean is to take a cruise. And what could be more pleasant than a leisurely voyage in luxury through calm, tropical seas making frequent stops at charming isles and exciting ports. Congenial company, delicious food and festive atmosphere are features of such a holiday.

Several steamship companies (with ships registered in a number of different countries) offer luxurious cruises to the Caribbean with stops at West Indian islands, South and Central American ports, and sometimes Bermuda. These liners are attractively decorated, air conditioned and serve excellent cuisine — sometimes featuring the national fare of the ship's home country. Sailings are from New York, Boston and New Orleans or other Gulf ports.

Among the British West Indian ports frequently visited is Nassau in the **Bahamas.** One of the most popular resorts in the Western Hemisphere, it is circled by the world-famous Paradise Beach.

Kingston, colorful capital of **Jamaica,** is one of the most interesting and attractive ports on any cruise itinerary. Jamaica long famous as one of the most luxurious and varied holiday islands in the Caribbean is the thriving leader of British West Indian Federation.

Barbados, only island in the West Indies to have remained under the British flag constantly since colonization, is famous for its flying fish and its fine outdoor sports.

Port of Spain, **Trinidad,** the great melting pot of Asiatic, African and European races, is one of the most cosmopolitan cities in the world. Contrasts in architecture, dress, language and religion make it a fascinating city to visit. And the shops here are excellent.

For quiet charm, outdoor sports and inexpensive accommodation the **British Windwards** (St. Lucia, Dominica, St. Vincent, Grenada) and Leewards (Virgin Islands, St. Kitts, Nevis, Antigua, Montserrat) cannot be beaten. Lush tropical vegetation, towering mountains (some volcanic), rivers and streams are their attractions.

Queen of the Antilles

In the French West Indies, a favorite stop is **Martinique,** known in the Caribbean as Madinina — queen of the Antilles. It was the birthplace of Empress Josephine. The eruption of Mt. Pelee in 1902 destroyed the beautiful city of St. Pierre, the ruins of which are the New World's Pompeii. Here is the Riviera of the Caribbean.

Guadeloupe, also French, is called the Emerald Island, for it is one of the greenest islands in the New World.

Proudly French, the islands of Martinique and Guadeloupe are the most liberally governed colonies in the West Indies. Since 1946 they have been incorporated as Departments of France, are represented in Paris by two senators and three deputies.

Curacao, Netherlands West Indies, has all the fairy-tale charm of the motherland — gabled houses, canals and bridges. Because of low import duties the port of Willemstad is one of the best places in the world to shop for Swiss watches, photographic equipment, French perfumes, silks, Oriental carved ivory, Brazilian and Argentine leather goods, Irish linen, Spanish shawls, Delft Blue porcelain, silverware and brassware.

Puerto Rico, is one corner of the United States where the native language is Spanish. Here is found a happy mingling of many influences—Spanish, Latin American and North American. A beautiful island, it is a first-rate holiday spot with fine hotels and beach resorts.

Less than a decade ago the American **Virgin Islands** were practically unknown as resorts. Today the islands which were purchased by the U. S. Government from Denmark, are among the most popular vacation centres in the Caribbean. St. Thomas is one of the West Indies gayest spots, St. Croix has genuine old-world charm and St. John offers quiet, primitive but comfortable living.

Three Republics

There are three republics in the West Indian group.

Cuba which Columbus said was "one of the most beautiful islands that eyes have ever seen" is today known as the Land of Fiesta and Siesta. One of the most gambling-conscious cities in the world, Havana also has some of the most fabulous night clubs.

Contrast is one of the chief characteristics of the **Dominican Republic** which with **Haiti** occupies the island of Hispaniola — once one of Spain's most prized possessions. In the midst of old-world civilization, ultra modern communities are being built. As a resort, it is deluxe, with excellent facilities for outdoor sports.

The Negro republic of Haiti is a most interesting and unusual country. The combination of French and African cultures, Christianity and voodooism, old and new, with a backdrop of beautiful scenery make Haiti a particularly attractive holiday location.

In South America, a frequent stop is La Guaira, **Venezuela.** From here cruise passengers are taken along a spectacular drive, through the purple-hued Maritime Andes to Caracas, the capital. One of the wealthiest cities in the world, the tremendous building boom of the past few years here is obliterating the Spanish colonial appearance of the capital.

Colombia is another frequent stop. Said to be the most purely Spanish of all South American countries, it is a particularly charming land to visit. Cartagena, the port at which the ship makes a stay, is a romantic, old walled city with some fine ancient buildings to explore.

Cristobal in the Canal Zone and its twin city of Colon in the Republic of **Panama** are gaudy, cosmopolitan cities with gay night life. It sounds confusing, but it is a fact that at Colon, the eastern end of the canal, you are actually 22½ miles west of Panama, the western terminus. This phenomenon occurs because of the winding course of the canal.

Here are some of the companies offering luxury cruises to the Caribbean this winter:

THESE CANADIANS buy shell novelties and woven straw mementos of a luxury vacation spent in the warm sunshine on the Caribbean isles.

Arosa Line—(Arosa Sun)—Feb-February 9, 16 days, four ports, from $260; March 2, 16 days, four ports, from $260. Sailing from Boston.

Canadian Pacific (Empress of Scotland) — January 15, 14 days, five ports, from $350; January 31, 19 days, nine ports, from $475; February 21, 19 days, nine ports, from $475: March 14, 14 days, five ports, from $350. Sailings from New York.

Cunard Line — (Mauretania) —February 7, 18 days, ten ports, from $515; February 28, 17 days, ten ports, from $485; March 21, 14 days, eight ports, from $390; April 6, 15 days, nine ports, from $395. Sailings from New York.

French Line (Ile de France, Flandre) December 22 (Special Christmas-New Year Cruise) 11 days, four ports, from $305; January 5, 12 days, four ports, from $300; January 24, 12 days, four ports, from $330; February 1, 17 days, seven ports, from $480; February 8, 14 days, six ports, from $385; February 21, 18 days, eight ports, from $510; February 26 (for carnival in Port of Spain), 17 days, seven ports, from $470; March 13, 15 days, five ports, from $425. Sailings from New York, New Orleans and Galveston.

Furness Withy (Queen of Bermuda, Ocean Monarch). December 20, 13 days, five ports, from $325; February 9, 13 days, five ports, from $325; February 23, 19 days, eight ports, from $475; March 15, 20 days, ten ports, from $500. Sailings from New York. These are in addition to frequent cruises to Bermuda and Nassau.

Greek Line (Olympia) January 26, nine days, three ports, from $225; February 8, 17 days, eight ports, from $395; February 27, 13 days, five ports, from $315; March 14, 13 days, five ports. Sailings from New York.

Holland-American Line (Nieuw Amsterdam, Maasdam, Ryndam) December 19 (special Christmas-New Year cruise), 14 days, four ports, from $315; January 9, 14 days, four ports, from $305; January 25, 14 days, six ports, from $340; January 30, 17 days, eight ports, from $510; February 11, 14 days, five ports, from $320; March 4, 12 days, three ports, from $265; April 30, eight days, two ports, from $225. Sailings from New York.

Italian Line (Conte Biancamano). A gala Christmas-New Year cruise, sailing December 22 from New York, 16 days, six ports, from $385.

Moore-McCormack Lines (Argentina, Brazil). Two special, 45-day "carnival cruises" sailing from New York Jan. 24 (for Mardi Gras Festival in Haiti) and Feb. 14 (for festival in Rio de Janeiro).

You Can Go by Freighter

Another pleasant way to cruise the Caribbean is by freighter. It's interesting too, for in this way you get a first-hand picture of West Indian and South American trade, and the big part that Canada plays in it. Most ships carry about 12 passengers.

Canadian National Steamships have fortnightly sailings from Halifax or St. John (in summer from Montreal) to the Caribbean. Rates start at $432.

Alcoa Line, one of the main freight and passenger carrying services in the Caribbean also has sailings every two weeks from Canada. From Halifax, the fare is $555, from Montreal $595. Voyages take five or six weeks. Norwegian ships (with Norwegian crew and cuisine) have been chartered for the Canadian service. There are weekly sailings from New York.

Saguenay Terminals operate weekly sailings from Montreal and Halifax. The 30-35 day cruises cost from $450. Ships are Norwegian or Swiss.

A combination freighter and deluxe liner cruise is offered by **Grace Line.** Freighter ships carrying 50 passengers, have more of the facilities of regular passenger-carrying vessels. A number of them even have swimming pools. The 16-to-18-day cruises cost from $450.

Your travel agent will be delighted to arrange a Caribbean cruise for you. Be sure to check that all travel documents are in order. A current smallpox vaccination certificate and passport are necessary. Visas are sometimes required and typhoid and yellow fever vaccinations are advised for some ports.

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VESSEL	From MONTREAL	To
SCYTHIA	*Wed. SEPT. 26	Havre, Southampton
CARINTHIA	Fri. SEPT. 28	Liverpool
SAXONIA	Fri. OCT. 5	Greenock, Liverpool
ASCANIA	Wed. OCT. 10	Havre, Southampton
IVERNIA	Fri. OCT. 12	Liverpool
CARINTHIA	Fri. OCT. 19	Greenock, Liverpool
SCYTHIA	*Wed. OCT. 24	Havre, Southampton
SAXONIA	Fri. OCT. 26	Liverpool
IVERNIA	Fri. NOV. 2	Greenock, Liverpool
ASCANIA	Wed. NOV. 7	Havre, Southampton
CARINTHIA	Fri. NOV. 9	Liverpool
SAXONIA	Fri. NOV. 16	Greenock, Liverpool
SCYTHIA	*Sat. NOV. 17	Havre, Southampton
IVERNIA	Sat. NOV. 24	Havre, Southampton
CARINTHIA	Thurs. NOV. 29	Greenock, Liverpool
	From HALIFAX	
ASCANIA	Sun. DEC. 9	Havre, Southampton
SAXONIA	Sat. DEC. 15	Cobh, Liverpool
IVERNIA	Fri. DEC. 21	Havre, Southampton
CARINTHIA	Sat. JAN. 12	Cobh, Liverpool
IVERNIA	Fri. JAN. 18	Havre, Southampton
SCYTHIA	Sun. FEB. 3	Havre, Southampton
SAXONIA	Sat. FEB. 9	Cobh, Liverpool
IVERNIA	Fri. FEB. 15	Havre, Southampton
CARINTHIA	Sat. FEB. 23	Cobh, Liverpool
SCYTHIA	Sat. MAR. 2	Havre, Southampton

VESSEL	From NEW YORK	To
QUEEN ELIZABETH	Wed. SEPT. 26	Cherbourg, Southampton
MAURETANIA	Thurs. SEPT. 27	Cobh, Havre, Southampton
PARTHIA	Fri. SEPT. 28	Liverpool
QUEEN MARY	Wed. OCT. 3	Cherbourg, Southampton
BRITANNIC	Thurs. OCT. 4	Cobh, Liverpool
QUEEN ELIZABETH	Wed. OCT. 10	Cherbourg, Southampton
MEDIA	Fri. OCT. 12	Liverpool
MAURETANIA	Tues. OCT. 16	Cobh, Havre, Southampton
QUEEN MARY	Wed. OCT. 17	Cherbourg, Southampton
FRANCONIA	Thurs. OCT. 18	Cobh, Liverpool
QUEEN ELIZABETH	Wed. OCT. 24	Cherbourg, Southampton
PARTHIA	Fri. OCT. 26	Liverpool
QUEEN MARY	Wed. OCT. 31	Cherbourg, Southampton
BRITANNIC	Thurs. NOV. 1	Cobh, Liverpool
MAURETANIA	Sat. NOV. 3	Cobh, Havre, Southampton
QUEEN ELIZABETH	Thurs. NOV. 8	Cherbourg, Southampton
MEDIA	Fri. NOV. 9	Liverpool
QUEEN MARY	Thurs. NOV. 15	Cherbourg, Southampton
FRANCONIA	Thurs. NOV. 15	Cobh, Liverpool
QUEEN ELIZABETH	Fri. NOV. 23	Cherbourg, Southampton
PARTHIA	Fri. NOV. 23	Liverpool
BRITANNIC	Thurs. NOV. 29	Cobh, Liverpool
QUEEN MARY	Fri. NOV. 30	Cherbourg, Southampton
ASCANIA	Fri. DEC. 7	Havre, Southampton
MEDIA	Fri. DEC. 7	Liverpool
QUEEN ELIZABETH	Sat. DEC. 8	Cherbourg, Southampton

*From Quebec

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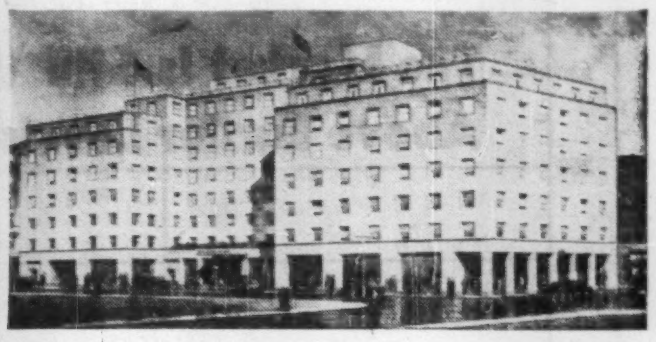

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News for immigrants

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This special fare may be financed under our Fly Now—Pay Later Plan. Make arrangements in Canada to prepay your friend's or relation's ticket to any point in Canada.
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Geneva	193.90	19.39	15.32	10.36	7.88
Glasgow	160.80	16.08	12.65	8.56	6.51
London	171.00	17.10	13.43	9.08	6.91
Paris	183.00	18.30	14.46	9.78	7.43
Warsaw	238.80	23.88	18.84	12.75	9.69

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BRUCE HUTCHISON

Bruce Hutchison writes about:

The Foolish Travelers

VICTORIA, B.C.—Preparing to set out on my annual holiday, I find myself baffled, even more than usual, by the habits of the Canadian people. I mean their holiday habits.

At the end of the summer season Mr. Leo Dolan, able boss of the government travel bureau at Ottawa, no doubt will add up the figures as usual and find that travel between Canada and the U.S. is, like merchandise, sadly out of balance. We customarily spend more travel money in the U.S. than Americans spend here, even though American travelers in total must outnumber us ten to one.

The huge annual migration of Canadians across the border, as Mr. Dolan is always telling us, constitutes an economic problem. I find it even more remarkable as a psychological problem and a study in national ignorance.

Why should so many Canadians want to see the U.S. when so few of them, not one in ten, has even seen more than a fragment of Canada? Why should anyone require a finer vacation land than our own? Why should I think of going to the U.S. on my holidays when I can go to southern Alberta?

Of course I wouldn't think of it but, in my part of Canada anyway, I belong to a minute minority. Most of my west coast friends, bound for California, Hawaii or Europe, consider me mad as I start out for the foothills. What can I possibly find there?

Canadians Know So Very Little About Canada

Never mind what I can find there. A holiday is a private affair and tastes differ. But if the average Canadian has no relish for pack horses and sleeping bags and is too intelligent to enjoy trout fishing, he can find almost anything else he likes somewhere in Canada. So far he hasn't tried to. I doubt that any people, in the Western world at least, know so little as Canadians about their own country. The average Canadian knows far more about the United States.

I am not thinking here about the attractions of our scenery which everybody sees in pictures and so few of us ever see at first hand. I am thinking about something even more attractive — the varied civilizations of Canada. For, like other peoples, we harbor several nations under the outer covering of a single state. Yet most Canadians seem to assume that for purposes of foreign travel they must cross an imaginary political line or even an ocean, the farther the better.

In recent years I have tried both forms of travel quite extensively and found far less interest in Europe than in Canada. Without disparaging the famous beauty spots and historic patina of the old world I have come to the conclusion that Europeans appear fascinating to us mainly because they speak a different language, dress somewhat differently and drink wine instead of whisky.

Actually, there are just as many inward differences between the peoples of Canada as between the peoples of Europe, though ours are outwardly disguised by common dress, gadgets and diet. The best use of a holiday is not to explore Canadian scenery, grand as it may be, but to explore the assorted Canadian folk. That takes a lot of doing, too much for one lifetime.

Real Purpose To Hook Few Native Albertans

For example, I am going into the eastern slopes of the Rockies pretending to be in search of trout when my real purpose is to hook a few southern Albertans, one of the most interesting sub-species in Canada.

Most travelers on the main roads, the railways or the airlines may suppose that the southern Albertan is just another Canadian with an addiction to a broad-brimmed hat and a million dollars in oil shares. I discovered to my delight last year that this creature is as distinct from the native of rural Ontario, say, or my own British Columbia as a Londoner is from a Parisian — not outwardly, not in anything you can give a name to, but in the more fundamental regions of the mind.

Thus considered, the Canadian mind will be found divided into such obviously separate compartments as the Newfoundlander (not yet fully a Canadian), the Prince Edward Islander, the Nova Scotian, the New Brunswicker, the French Canadian, the Ontario man (with a large sub-compartment in Toronto), the prairie man and the British Columbian.

If you were to travel in Canada for the rest of your life you would never have time to discover all the component pieces of a culture apparently uniform but in fact sharply regional and infinitely varied. We are all Canadians, yes; but you don't have to cross a boundary, you need to move only a few miles in any direction to enjoy all the advantages of foreign travel, if you look only an inch below the Canadian surface. You can feel more lonely and more exiled in Halifax, Montreal or Regina, as I can testify, than in Rome.

Lively, Friendly Least Inhibited Among Canadians

I happen to be attracted by the people of the foothills because they seem to me the most lively, friendly and least inhibited among Canadians, all of them touched by the sun and a redeeming madness. Some students of Canada will prefer the several distinct peoples of the Maritimes, others are fascinated by the richly various French-speaking races of Quebec and I dare say a whole library could be written about the races of Toronto.

Last night, while I was packing up, a great Canadian historian happened by here on his holiday and informed me that he was devoting his last years to a study of the lower half of Vancouver Island — not the whole island, mind you, since that would be too large a territory, but just the southern half. Here he had found more improbable and forgotten history, more legends, more eccentrics and glorious freaks, alive and dead, than in any part of the nation.

That startled me, as a resident of the Island for half a century. My surprise represents a typical ignorance of Canada. Always the thing close at hand escapes us because we are used to it; whereas we go into a foreign country, discover some commonplace thing there and are enchanted by the quaint ways of the foreigners. Perhaps it requires a foreigner, with the eye of innocence, to detect the subtleties of our life and then he usually misconstrues them.

Priestley Saw The Canada We Have Yet To Discover

I don't like to mention him again, lest I be suspected of harboring some private prejudices, but J. B. Priestley, after spending 12 whole days in Canada, has been interpreting its true inwardness to the English public in a truly outstanding fashion.

He has found that we are a frustrated people, writhing under some spiritual bruise and deep psychic wound, desperately uncertain and vainly searching for a path into the future.

The state of the Canadian mind seems to me precisely the opposite of this diagnosis, but the opinion of a sensitive fiction writer, if fictional, confirms the variety of this land. Mr. Priestley has seen a Canada that most of us have yet to discover.

You see here, I suppose, what you want to see and for holiday purposes it doesn't matter if you are wrong, as you are almost bound to be. The great mistake of Canadians, almost a national tragedy, is that so many of them want to see anything but Canada, must travel vast distances at great expense to find something new though all the physical prodigies of nature and the still larger prodigies of human nature are only a little piece down any road.

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For information write:
The Executive Director, Banff, Alberta,
or
The Directors, Schools of Commerce, Universities of Alberta, British Columbia, Saskatchewan and Manitoba.

National Paper Box Purchases Bulman Bros. (B.C.)

David Spence, Vice-President and Managing Director of National Paper Box Limited has announced the purchase of Bulman Bros. B.C. Lithographing & Printing Ltd.

The purchase of the graphic and creative facilities of Bulmans will offer National's customers printing and labelling facilities and at the same time bring to Bulman's customers the advantages of the associated converting operations of National Paper Box Limited and its subsidiary company, Vancouver Paper Box Co. Ltd.

Both firms will continue to operate as separate units under their present managements.

National Paper Box Limited is a wholly owned subsidiary of Sidney Roofing and Paper Co. Ltd.

The time-tested, performance-proved B & W steam plant designs are big reasons why so many industrial, institution and public utility men come to Babcock again and again when modernization or expansion of steam plant facilities calls for new equipment.

They know from long, satisfactory experience that B & W boilers are soundly designed, safely built and conservatively applied, to fulfill the specific conditions of each job and that Babcock has the resources and the determination to make good.

It will pay you, as it has so many others, to investigate the advantages that come with B & W boilers.

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FP 6

Life, Annuity Benefits Up $16 Million

Canadian families were paid more than $29.6 million in July in life insurance and annuity benefits by some 60 insurance companies operating here.

This brought the total of such insurance benefits to $205.6 million for the first seven months of the year, up $16 million from the same period in 1955.

Death benefits in the January-July period totaled $76.3 million this year as against $70.9 million last year. Payments of matured endowments, cash values, disability benefits and annuities amounted to $86.4 million over the same months; policyholder dividends, $42.9 million.

Tor.-Dominion Bank Pays 32½c Quarterly Div.

Toronto-Dominion Bank announced this week a quarterly dividend of 32½c per share on the capital stock of the bank payable Nov. 1, 1956 to shareholders of record at the close of business Sept. 28, 1956.

Shareholders will also receive an extra payment of 20c per fully paid share for the year ending Oct. 31, 1956. This brings the current fiscal year's total distribution to $1.50 per share.

Dividend payment and the extra distribution on shares subscribed for under the recent offering (FP May 19, 1956) will be paid in the proportion that the amount paid on the new share on or before Sept. 28 bears to the subscription price of $32.

A Guaranteed
SHORT TERM *Investment*

4% FOR FIVE YEARS

Guaranteed Investment Certificates of the Toronto General Trusts are issued at par in amounts from $100 upwards to run for five years and pay 4%.

Interest is paid half-yearly by cheque.

Repayment of principal on maturity and payment of interest are fully guaranteed by the Corporation. Certificates are a legal investment for trustees.

Endorsed by investors for more than fifty years

For complete details write or telephone

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Corporation

MONTREAL • TORONTO • OTTAWA • WINDSOR • WINNIPEG
REGINA • SASKATOON • CALGARY • EDMONTON • VANCOUVER

New Head Office For Cdn. Oil Cos.

The new head office of **Canadian Oil Cos.** will comprise the top four floors of a new 10-story office building now under construction on University Avenue in Toronto by **Canadawide Investments,** the owners.

One of the features of the modern glass and aluminum building will be multi-story parking facilities. This fully enclosed and integral part of the new building will have five storys—two and a half storys above ground and two and a half storys below ground, all to accommodate 110 cars.

Canadian Oil will occupy 50,000 sq. ft. of the 100,000 sq. ft. available office space. Plans call for the building to be completed next July.

NEW ISSUE

$15,000,000

The Shawinigan Water and Power Company

(Incorporated by Special Act of the Legislature of the Province of Quebec)

First Mortgage and Collateral Trust Sinking Fund Bonds
Series "R", 4¾%

To be dated October 1, 1956 — **To be due October 1, 1976**

Principal, half-yearly interest (April 1 and October 1) and redemption premium, if any, to be payable in lawful money of Canada at any branch in Canada, at the option of the holder, of the chartered bank to be designated in the Bonds. The Bonds to be in coupon form, with provision for registration as to principal, in the denominations of $500 and $1,000, and in fully registered form in the denominations of $1,000 and multiples thereof authorized by the Company; the coupon and fully registered Bonds, and the different denominations, to be interchangeable in equal aggregate principal amounts, and to be registrable and transferable in Montreal and Toronto.

The Company will have the right at its option, to redeem at any time all of the outstanding Bonds, or from time to time any part thereof by lot, upon giving not less than 30 days' prior notice, at the principal amount thereof and accrued and unpaid interest to the date fixed for redemption plus, in the case of redemptions within the following periods, a premium equal in amount to the following percentages of such principal amount: to and including October 1, 1961, 4.75%; thereafter to and including October 1, 1964, 3.75%; thereafter to and including October 1, 1967, 2.75%; thereafter to and including October 1, 1970, 1.75%; thereafter to and including October 1, 1973, 0.75%; and thereafter without premium; provided, however, that the Company will not have the right to redeem, prior to October 1, 1961, any of the Bonds as a part of, or in anticipation of, any refunding operation by the application, directly or indirectly, of funds obtained through borrowings having an interest rate or cost, calculated in accordance with established financial practice, of less than 4.75% per annum.

Trustee: Montreal Trust Company

In the opinion of Counsel, these Bonds will be investments in which the Canadian and British Insurance Companies Act states that companies registered under Part III thereof may, without availing themselves of the provisions of sub-section (4) of Section 63 of the said Act, invest their funds.

A copy of the official offering prospectus will be promptly furnished on request.

PRICE: 100 and accrued interest

We, as principals, offer these Bonds, subject to prior sale and change in price, if, as and when issued by The Shawinigan Water and Power Company and accepted by us, subject to the approval of all legal matters on behalf of the Company and ourselves by Messrs. Hugessen, Macklaier, Chisholm, Smith & Davis.

Subscriptions will be received subject to rejection or allotment, in whole or in part, and the right is reserved to close subscription books, at any time without notice. It is expected that Bonds in bearer interim form, later exchangeable for Definitive Bonds in coupon and fully registered forms, will be available for delivery on or about October 10, 1956.

Dominion Securities Corpn. Limited

Wood, Gundy & Company Limited	A. E. Ames & Co. Limited	Collier, Norris & Quinlan Limited
Nesbitt, Thomson and Company, Limited	McLeod, Young, Weir & Company Limited	Greenshields & Co Inc
L. G. Beaubien & Co. Limited	Royal Securities Corporation Limited	W. C. Pitfield & Company Limited
Midland Securities Corpn. Limited	Gairdner & Company Limited	Bell, Gouinlock & Company, Limited
Cochran, Murray & Co. Limited	Mills, Spence & Co. Limited	René-T. Leclerc Incorporée
Geoffrion, Robert & Gelinas, Inc.	Burns Bros. & Denton Limited	Merrill Lynch, Pierce, Fenner & Beane
Crédit Interprovincial, Limitée	James Richardson & Sons	Matthews & Company
Dawson, Hannaford Limited	Mead & Co. Limited	MacTier & Co. Limited
H. C. Flood & Co. Limited	Anderson & Company Limited	Brawley, Cathers & Company
Ross, Knowles & Co.	R. A. Daly & Company Limited	Charles H. Burgess & Company
Houston, Willoughby & Company Limited	Tanner Bros. Limited	Pemberton Securities Limited
The Western City Company, Limited	Belanger Inc.	J. C. Boulet, Limitée
F. J. Brennan & Company Limited	Canadian Alliance Corporation Limited	Casgrain & Company Limited
Clément, Guimont Inc.	La Corporation de Prêts de Québec	Desjardins, Couture Inc.
Oscar Dube & Cie Inc.	Eastern Securities Company Limited	Garneau, Boulanger Limitée
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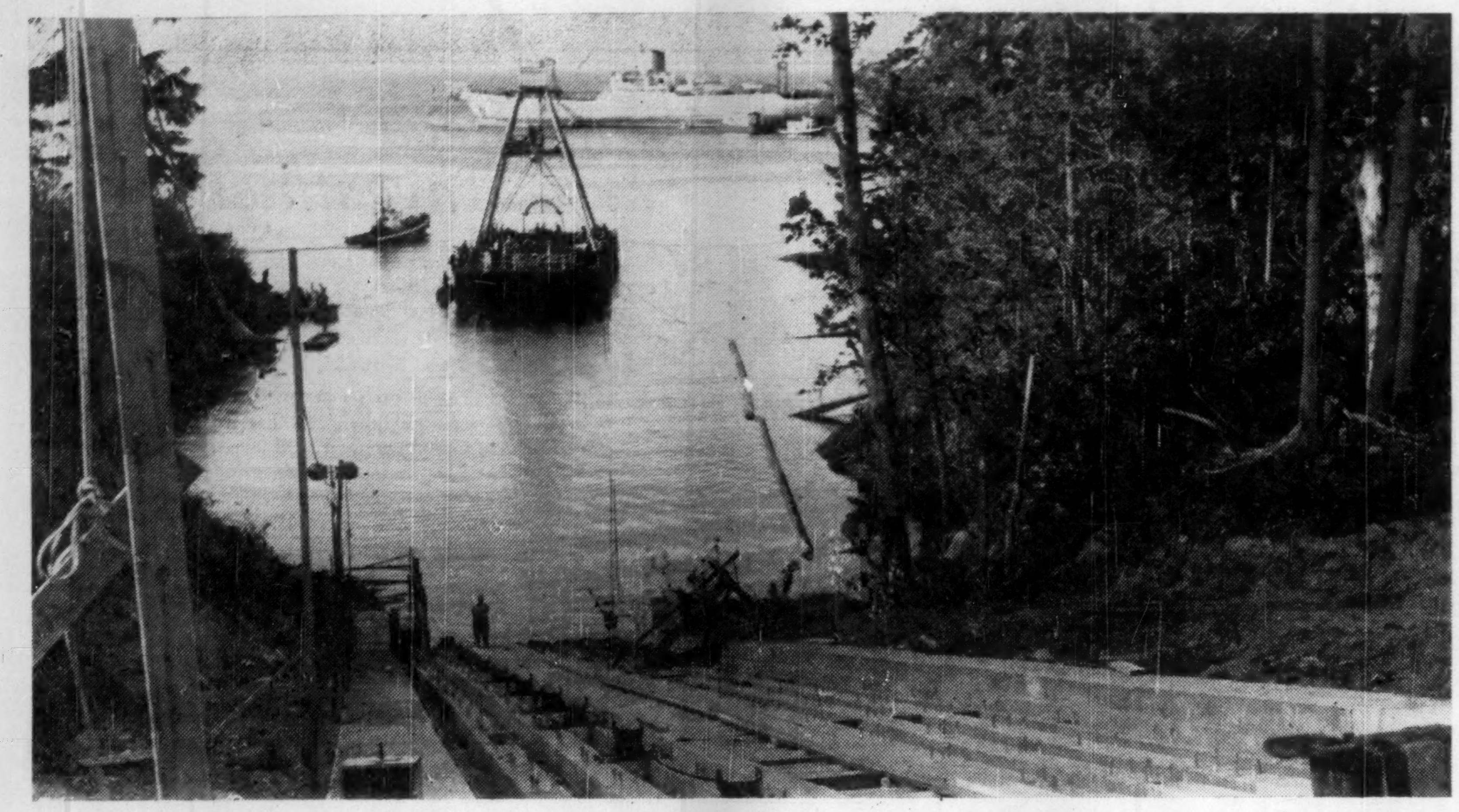
Société de Placements, Incorporée		Stanbury & Company Limited

September 1956



THIS CABLE SCOW loads B. C. Electric cable from the deepsea cable ship Ocean Layer (background) then moves close to shore with it. In foreground is the cable chase sloping up from the water on the east s hore of Galiano Island.

B.C. Undersea Power Flows

An event took place in Victoria on Tuesday which the eyes of the electrical science world watched with keen interest.

At an official ceremony, a switch was pulled and 132,000 volts of electricity surged through the world's longest under[illegible] cable, connecting the British Columbia mainland with power-hungry Vancouver Island.

It was a triumph of exhaustive planning, intricate manufacture and then the delicate job of laying down the four-inch submarine cable.

It hooked the lower half of Vancouver Island into the **British Columbia Electric Co.'s** huge mainland power system and also connected the island with the Pacific Northwest power pool, the largest energy pool in the world.

When the $6-million job was first announced two years ago, B. C. Electric President A. E. Grauer said, "Completion of the cable will assure an adequate supply of power for future industrial development on lower Vancouver Island. It will bring the lower half to its full industrial potential which otherwise would not have been reached in the next decade."

Powerwise, Vancouver Island is cut in two. B. C. Electric services most of the lower half, from Duncan south, and the provincial utility, the **British Columbia Power Commission,** serves the northern half.

B. C. Power Commission is currently engaged in a frantic development race of power sites to ward off a fast-approaching shortage of power.

Laying the Cable

The cable, 90 miles of it, was designed by **British Insulated Callenders Cables Ltd.** Manufacture of it took two years in their Manchester, England, factory. Testing in British waters took several months. Actual laying was almost an anti-climax. It took only five weeks.

But that is glossing too lightly over it. While the cable was being manufactured, exhaustive surveys were being made to determine the best route on the ocean floor.

Strait of Georgia is a notorious channel, and the route the cable must take must have a bed of sand, fairly even and free of jagged rocks and swift currents. Every inch of the 4,000-ft.-wide path the cable must take was mapped with depth sounders.

The route finally selected was from Tsawwassen Beach, south of Vancouver, across 14 miles of ocean to Galiano Island, then by transmission line across Galiano and Parker Islands for eight miles, and then across another four miles of ocean to Vancouver Island.

The cable was then hooked into B. C. Electric's transmission lines serving domestic users and industry.

On the Vancouver side, the company also had to build a huge substation which would cut down the electricity to 132,000 volts and feed it into the cable.

The submarine line is not one but actually five cables laid several hundred feet apart on the ocean floor. Four will be used at once and the fifth kept for emergency. The company, realizing that Vancouver Island is bound to keep apace with B. C.'s huge industrial boom, has made provision for more cables.

New Type Cable

The cable is a new type, developed and tested by top British electrical engineers, but never actually used commercially.

It weighs 16 lb. per ft. It is about four in. wide but the actual copper core which carries the juice is a mere one third of an inch wide. The rest is insulation. The inner core is protected by nitrogen gas under 300 lb. pressure per sq. in.

No other submarine cable can carry 132,000 volts. No other submarine cable in the world is as long. The biggest in Canada is one crossing the Gulf of St. Lawrence with a load of 60,000 volts.

The company also had to build 58 miles of transmission line to hook up both ends of the cable.

In June, the 4,000-ton vessel Ocean Layer arrived from England, loaded with highly skilled engineers and technicians as well as the 90 miles of cable.

From many parts of the world came electrical engineers to watch first hand the highly technical and tricky job of laying down the cable.

The Tricky Part

"This project has spotlighted British Columbia in the engineering world," said C. O. Boyse, a director of the British firm on his arrival in Vancouver.

The trickiest part of cable laying is putting down the cable between the cable ship 500 yds. offshore and the concrete ramps which anchor the cable.

It's done in reverse. The cable is payed out from a derrick in the bow of the cable ship to a specially constructed scow. Then the scow's crew works it inshore to the anchoring ramps.

From then on, the operation looks simple to the uninformed bystander. The Ocean Layer, following a path of buoys into deep water, begins steaming at about four miles an hour toward its landfall.

The cable snakes off a huge drum on the bow of the ship, coils around two other drums which take out the twists and kinks and slips off the rollers on the ship's clipper bow and drops over the side on the exact path marked out by the buoys.

This is continuous cable, the first laid down without underwater splices, so progress is fairly fast.

The four-mile stretch between Parker Island and Vancouver Island was laid down in four days. The remaining 14 miles was laid down in about a month.

In cable-laying, it is the preparation that takes the time.

"We tested, checked, then retested and double-checked this cable," a cable engineer said. "Everything went fine although my ulcer did a back flip a dozen times a day. That's cable laying for you."

What if that nightmare to cable companies—a break—occurs?

The break would be serious and costly, of course, but again British engineering skill has come up with an answer which will help make the repair job easier.

A trouble-detection alarm system is built into the cable. This electronic watchdog will warn of a drop in pressure inside the inside cable which contains the nitrogen to keep out water.

This alarm system was installed by the **British Columbia Telephone Co.** The alarm connections are installed in four "gas pressure houses." If there is a leakage or a short circuit, a light flickers in the telephone exchange nearest the zone of cable where the break occurs. Thus it can be quickly isolated. The telephone operator informs the B. C. Electric trouble-shooters and the standby cable is switched in.

"Tapping mainland power with this submarine cable removes entirely any ceiling on southern Vancouver Island's industrial expansion," said B. C. Electric President Grauer.

New Voltage Eases Desperate Shortage in Island Industry

Vancouver Island is an area that needs a great big shot of hydro power in the arm.

Located 25 miles off the British Columbia mainland, this huge island has 19% of the province's population, vast virgin forests equal to any in the world, large mineral deposits, bustling cities and towns and a prosperity built on timber. But it has only six per cent of B C.'s hydro power.

It recently got a lively injection of 132,000 volts when the **B.C. Electric Co.** completed its $6 million submarine power cable laid from south of Vancouver to the island. The cable, longest and most powerful in the world, will supply these extra 132,000 volts to the southern portion of the island.

This will keep Victoria, Esquimalt and the southern part of the island well supplied for the next 10 years, B.C.E. officials estimate, and by that time additional cables will probably be laid down to handle future expansion.

But it is the central and northern parts of the island that are desparately short of power. It is in these areas where the best and greatest portion of the timber grows. It is where the timber mills are located and being built.

As an example of one pressing need for more power, there are $70 million worth of mills operating now, and a staggering $87 million under construction.

In addition, the island is growing populationwise with the rest of British Columbia and new secondary industries are springing up everywhere.

To meet the demands, B.C. Power Commission is currently in the thick of a $50 million capital expansion program. Contracts worth $35 million were let in the 1955-56 fiscal year.

About 192,000 additional horsepower will be added to the commission's system by the end of 1957, when these projects are completed:

- The controversial $22 million Upper Campbell-Buttle Lake project. One 42,000 h.p. generating unit should be in action by the end of next year.
- The $8 million Ladore Falls project which will begin turning out 70,000 h.p. later this year.
- The $20 million Ash River-Great Central Lake-Sproat Lake system which will yield 80,000 h.p.

That just about does it as far as water power is concerned on the island. Commission engineers have surveyed dozens of sites, but none seem suitable for a major project.

Frantic for Power

Recently, Commission Engineer Larry Wight said, "The commission is almost frantic for power. The present developments will only meet our needs until 1960, judging by the present rate of expansion."

Already the pinch is being felt. In February, plants ran at overload to meet the demand. And the demand is getting heavier every month.

Recently, commission member H. H. Griffin told the Associated Chambers of Commerce of Vancouver Island, "The island's continued economic development depends on getting more power.

"We (the commission) do not create the demand for power but we have a responsibility to meet it."

Hired Rainmakers

They have taken desperate measures, including the hiring of rainmakers from the U. S. to try to fill the reservoirs when mid-summer droughts have caused power "brown outs" on the island.

It is difficult to assess the value of such methods but the rainmaking firm claims it has increased the rainfall, although unable to say by how much.

In another move, the commission has let contracts for a $15 million gas turbine generating station. It will be the largest in Canada, generating 100,000 h.p.

The thermal station, which will go into operation in late [illegible], and its turbines will be driven by exhaust gases. Engineers claim this method is the most efficient means of generating power.

But all this is still far off the amount required by 1960 and the years beyond.

The commission figures that it will have to boost its horsepower up to 700,000 by 1960 to service all its Vancouver Island customers as well as those in the interior. They will require two billion kwh, compared with the present 950 million required now.

$100 Million Trump Card

But the commission has one trump card which if it is able to play it means plenty of power for a long time to come.

Like the rival B.C. Electric Co., the commission is casting its eyes far from its traditional sources of power.

The B.C. Electric is planning a $250 million dam and plant at Mica Creek on the untapped Columbia River, and it expects to generate 1,250,000 h.p. It also hopes to overcome a well-entrenched opposition and harness the Fraser River, but the fight will be a long one, and probably unsuccessful, as fish interests claim dams will destroy the multi-million dollar salmon fishery.

The B.C. Power Commission's trump card is the isolated Homathko River and Chilco Lake system 200 miles northwest of Vancouver on the mainland and one of the most wild and isolated areas in Canada.

But engineers believe the Homathko-Chilko system can produce more than a million horsepower if the river, its tributaries and the high altitude lake are harnessed with a system of dams and tunnels.

The cost would be terrific; at least $100 million and possibly twice that figure.

The power commission sent crews and four helicopters into the mountainous region this summer and the results of their preliminary survey will be studied this winter to find out if the huge project is feasible.

Future Prosperity

If it is, and the B. C. Government gives the green light to the most ambitious power project it has ever attempted, then the future prosperity of Vancouver Island is assured.

The power would be brought to the commission's power lines by transmission lines leapfrogging across the northern islands of the Strait of Georgia to Campbell River.

This tremendous surge of power, which would be several years in arriving, considering the vast engineering problems, would be the greatest thing to happen to Vancouver Island's industrial history.

Charged with the task of deciding whether it is possible is the commission which was set up by the B. C. Government in 1945. The commission then, by purchase of existing power systems and the construction of others, had a capacity of 65,000 h.p.

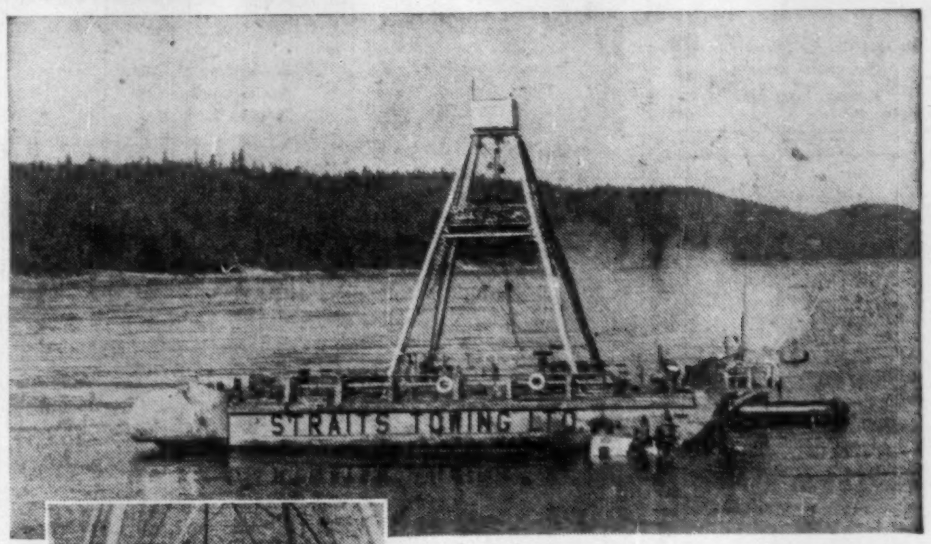
It has grown by leaps and bounds since then, but it faces its stiffest problems now. The commission is proud that it has never needed to accept a government subsidy and its backers claim it is the most efficient public utility in the nation.

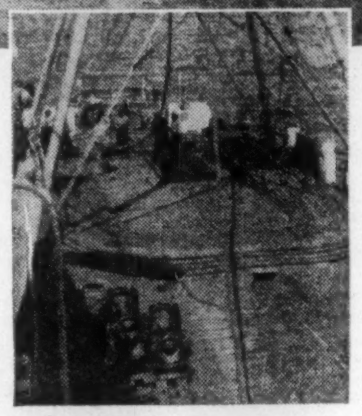
INDUSTRIAL RELATIONS

"Labor Roundup"—another Post exclusive—reports on the practical side of industrial relations week by week. Keep yourself in touch with the trend of union activity. Read The Financial Post.

Yearly by mail in Canada $6; elsewhere $7 yearly.

STRAITS LAYS WORLD'S LONGEST UNSPLICED SUBMARINE CABLE





A powerline linking the hydro-electric resources of the B.C. mainland to Vancouver Island was laid a distance of 19½ miles by a skilled Straits Towing crew. The line (shown left) is the longest unspliced submarine cable in the world and was engineered to carry the highest operating voltage and capacity. It is just one more example of Straits' ability to supply the right men and materials for a wide range of jobs.

TOWING AND SALVAGE—DAY OR NIGHT

STRAITS TOWING Limited

VANCOUVER: Ft. Heatley Ave., MArine 0121

PRINCE RUPERT: 345 W. 3rd Ave., Pr. Rupert 2329 Night Calls: 5333

NANAIMO TOWING Limited, Bastion and Front Streets, Nanaimo 555 — Night Calls 2318

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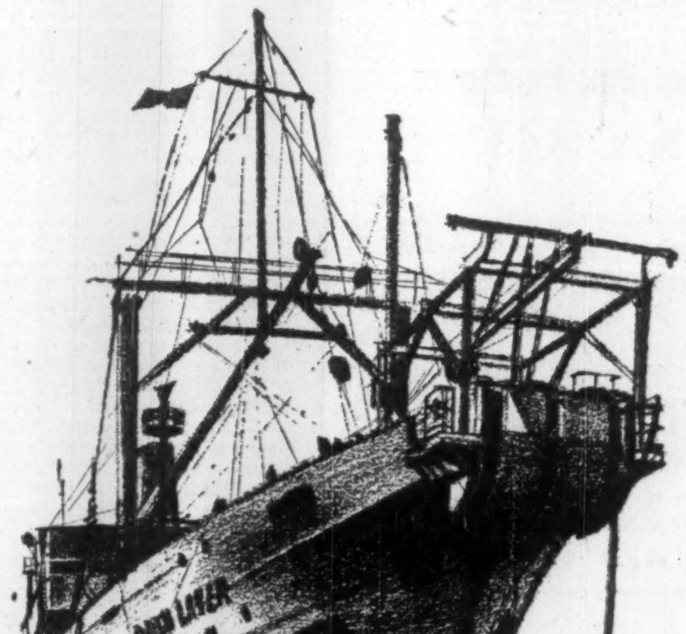


VANCOUVER ISLAND IS NOW LINKED TO THE B.C. ELECTRIC'S MAINLAND POWER SUPPLY

A NEW FRONTIER IN SUBMARINE CABLE ENGINEERING HAS BEEN CROSSED

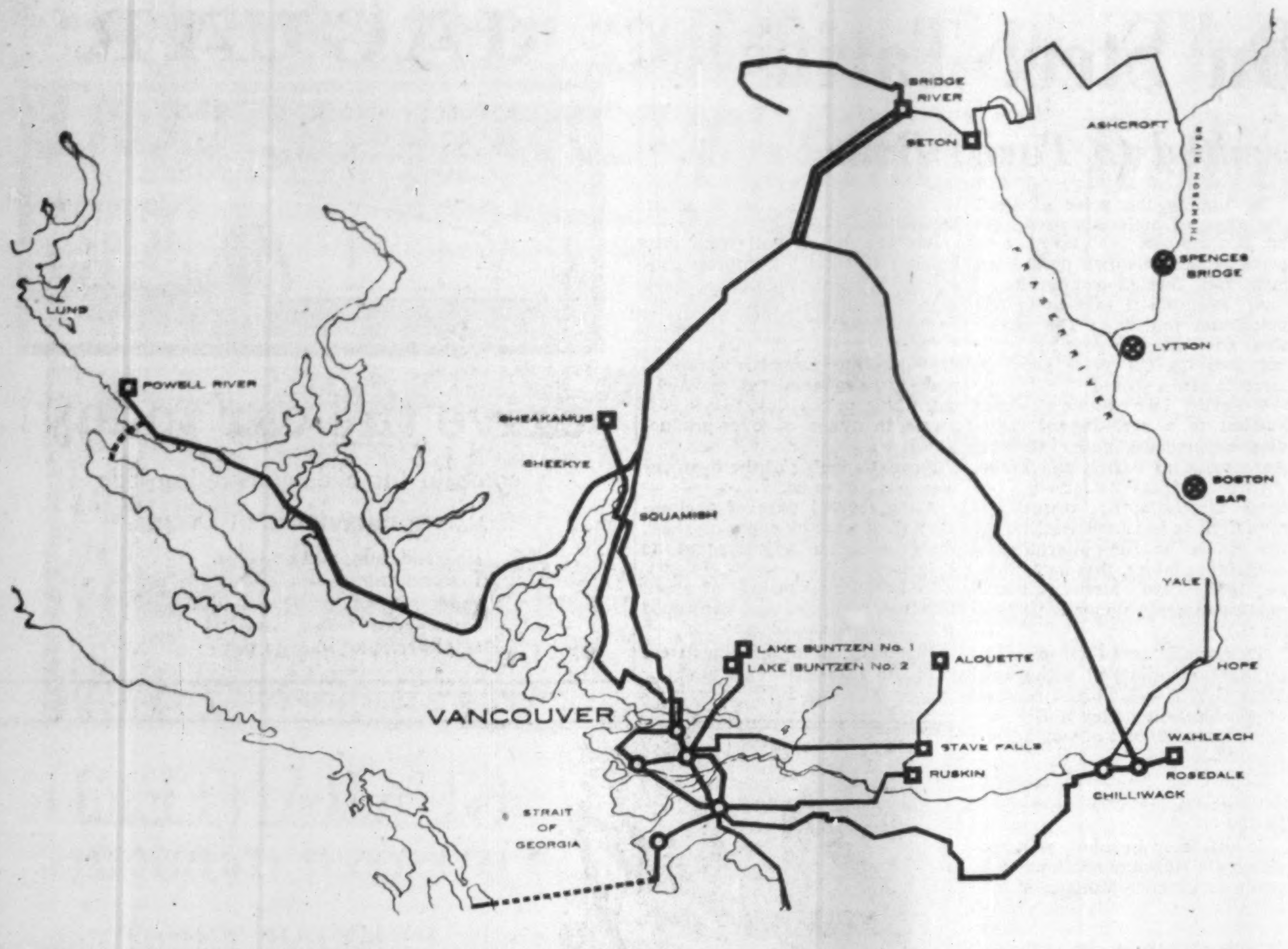
If the population and industry of southern Vancouver Island were to double in size tomorrow, all their electric needs could be supplied by the circuit which the B.C. Electric has just completed across the Strait of Georgia between British Columbia's Mainland and the Island.

The total underwater and overhead circuit is 46 miles in length, of which 19½ are under the sea. It conducts 120,000 kilowatts of electricity at 132,000 volts. No submarine cable of such high capacity, operating voltage and unspliced length was ever built before.

B.C. Electric customers on Vancouver Island no longer need be faced with a shortage of power or more expensive methods of producing it; they can now draw on the Mainland hydro resources of the Company, which in the past nine years have been tripled, and which, by 1960, will have six times the capacity of 1948.

The success of this bold innovation in the transmission of power assures a constant dependable supply of low-cost energy to spur the economic progress of Vancouver Island.

British Columbia Electric Company Limited
British Columbia Power Corporation, Limited



B. C. ELECTRIC's mainland power empire: This map shows plants in existence and under construction, power lines and the new undersea cable to Vancouver Island (lower centre).

A Power Empire Grows

On Dec. 1, 1955, A. E. "Dal" Grauer, the lean ascetic-looking but hard-driving president of the **British Columbia Electric Co.** declared:

"We're getting the B.C. Electric ready a pace or two ahead of time to serve the increase in population and industry which will certainly be coming here.

"Our economic studies offer convincing evidence that, as bright as the present picture is, there is every likelihood that the years immediately ahead will be even brighter."

He made this rather conservative statement in announcing that the B.C. Electric would embark on an expansion program of $75 million during 1956.

The money is being spent on switching from artificial to natural gas, erecting new office buildings and sub-stations, carrying on its several power projects.

This year saw completion of the $6 million submarine cable carrying 132,000 volts from the mainland to power-hungry southern Vancouver Island. The huge and tricky job, just completed, gives the firm the largest and longest underwater cable in the world.

As Mr. Grauer spoke, the company, one of Canada's great private utility firms, was completing its 10-year postwar expansion program. During the period, it spent nearly one-third of a billion dollars on its electric, gas and transit facilities.

But electricity is the company's big money maker. The continuing success of the company is always predicated on this fact.

Like any successful utility, B.C. Electric thinks ahead not in years but in decades. At present, the company's thinking powerwise goes ahead to 1980.

At present, the B. C. Electric system generates about 700,000 hp, serving 67% of the people in B. C.

But B. C.'s expansion is snowballing. About three new industries begin production in the province every day. The demand for more and more power is staggering. So great is the rate of expansion in the province that some economists fear that the physical abilities of its people is not sufficient to keep up with the demand.

The B. C. Electric is gearing itself to a 25-year program to generate the power to keep the wheels of industry and progress rolling.

On Mar. 29, 1956, in presenting his annual report, Mr. Grauer told the shareholders:

"Nowhere are the proportions of current expansion in B. C. better shown than in the capital program of your company because of the necessity of our anticipating the growth requirements of the areas we serve."

Then he went on to say, and his remarks seemed almost those of a visionary, so highly confident were they of the future of B. C.:

Need 6 Million HP

"Taking the 25-year period that the Royal Commission on Canada's Economic Prospects (of which he is a member) is being asked to look ahead and projecting our generating requirements on a 15% load growth for the first five years, 10% for the next five years and 8% for the remaining 15 years, we get an additional generating

(Continued on page 16)

A Strong Link for Canada's Future

Submarine Power Cable From Vancouver Island to the Mainland

15 miles of submarine power cable successfully completed. This occasion points out the advantages to Canadians in the association between Phillips Wires and Cables and the BICC Group.

Phillips, Canada's original cable company, have 67 years experience of electrical problems peculiar to this country. Their knowledge, coupled with the world-wide facilities of BICC, can help to open up a whole new field of electrical engineering projects.

Teamed together, they can be a strong link in the forces that are helping to build this country.

Phillips
ELECTRICAL COMPANY LIMITED
WIRES & CABLES
THE CANADIAN AFFILIATE OF THE B. I. C. C. GROUP
Head Office — Brockville, Ont.
MONTREAL • OTTAWA • TORONTO • HAMILTON • WINNIPEG
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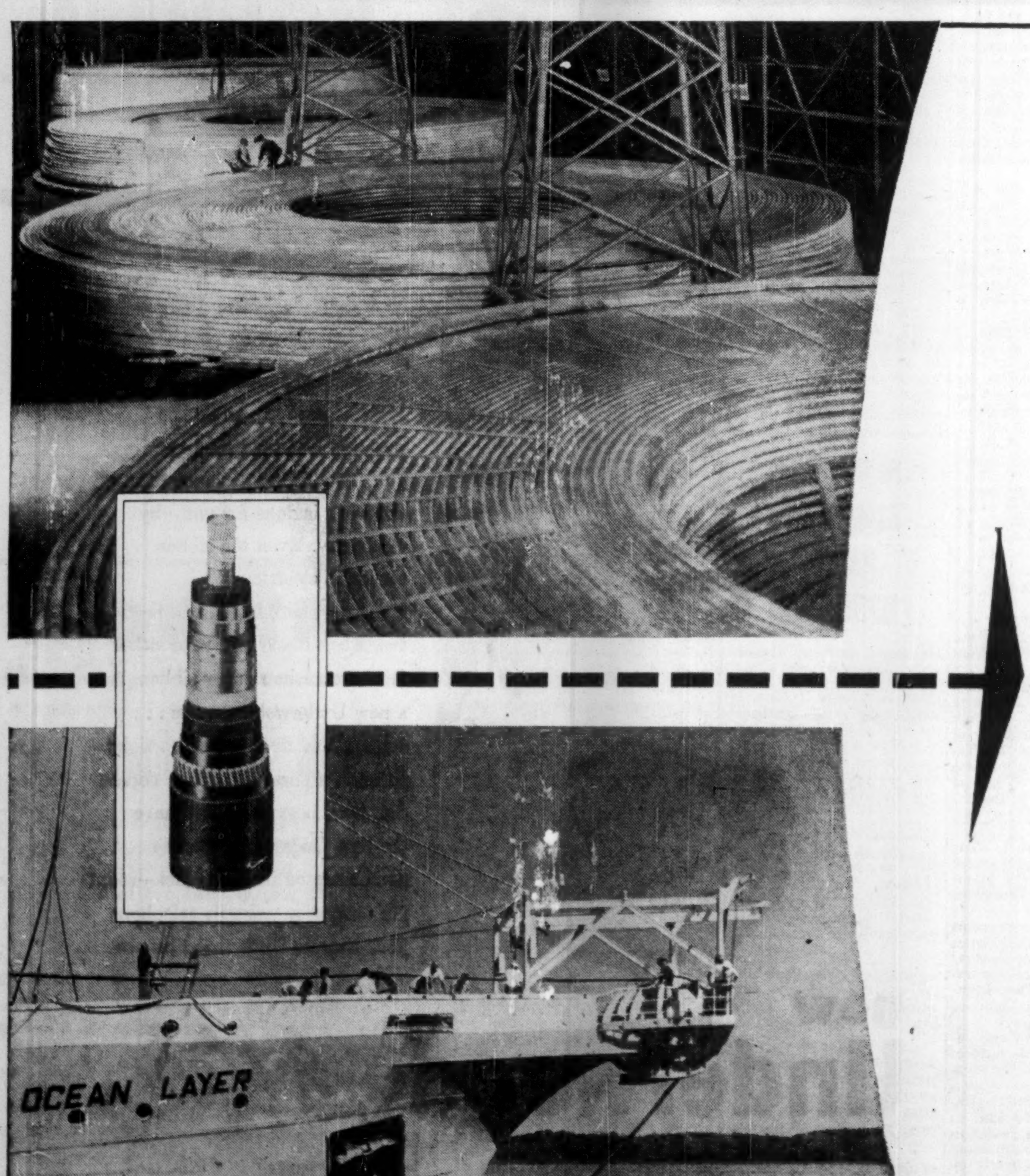
5641

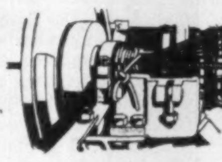


In February 1954, BICC were awarded a contract by the British Columbia Electric Company to supply and lay a submarine power link between Vancouver Island and the mainland.

MADE BY BICC

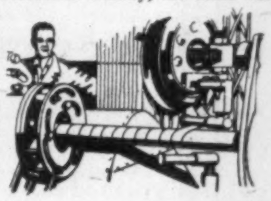
The contract required some 91 miles of 138,000-volt, gas-filled cable—*including five continuous lengths of over 15 miles.*

A special single-core gas-filled cable was designed with a hollow duct conductor, for operation at a pressure of 300 lbs. per square inch. This was necessary in order that the cable's gas pressure should always exceed the water pressure at the bottom of the Georgia Strait, some 600 feet deep in places.



The cable was sheathed in lead alloy and reinforced against internal gas pressure by bronze tapes. A layer of vulcanized rubber protected the tapes against corrosion. Finally, the cable was armoured with galvanized steel wires for mechanical protection and to take the strain during coiling and laying operations.

With the design settled, special plant was installed at a BICC Group factory in Manchester close to the docks, and production commenced.



15 mile CONTINUOUS LENGTHS of SUBMARINE POWER CABLES

MADE & LAID by BICC

LAID BY BICC

From Manchester to Vancouver (via Panama) it is some 8,700 miles. But the first few hundred yards of this journey presented one of the greatest problems . . . namely, moving the very long and heavy lengths of cable (some weighing 800 tons) from the factory to the ship.

A 45 feet high gantry with power winches was built to carry the cables, first to the coiling down shed for testing and storage, and later, when all the cables had been made, over the docks area to be loaded aboard the "Ocean Layer." This up-to-date, 4,600 ton vessel is the second largest cable-layer in the World. Equipped with a Pleuger active rudder, housing an auxiliary propeller, she has the extreme manœuvrability essential for cable laying. The long journey to Vancouver was uneventful. Laying operations were

successfully carried out under the control of BICC engineers, who also terminated and tested the installation. Thus, from start to finish, design, development, manufacture, transportation, and installation were undertaken or controlled by BICC—*the only organization with the facilities to manufacture long, continuous lengths of power cable and to install them anywhere in the World!*

Now, after only two and a half years, this joint Anglo-Canadian venture has been completed, on schedule. Thanks to the courage and enterprise of the British Columbia Electric Company and the engineering skill of the BICC Group, the swiftly growing and highly important timber, pulp and paper industries of Vancouver Island can now obtain adequate power from the hydro-electric generating stations on the mainland.

BICC CABLES THE name for cables-everywhere

BRITISH INSULATED CALLENDER'S CABLES LIMITED, 21 Bloomsbury Street, London, W.C.1, England

(Advertisement)

HOW THE WRONG KIND OF ADVERTISING CAN BE FATAL

Once upon a time there was a man, named Bryon Flute, who made a meagre living by writing advertisements. He had a hard life. He would first write an advertisement, then make hundreds of copies of it. Mr. Flute did this cleverly, by tying several pens together and using them all at once; but it still took him ages.

Of course, after the copies were all made, Mr. Flute had to hand them out to likely looking prospects. But when things got rushed he would just make a joke of it. "I should have chosen something restful — like hard rock mining," he would say, with a light laugh.

Anyway, one day a Client told Mr. Flute to write and distribute an advertisement for a line of merchandise his factory was producing: a new type of guaranteed duck call. Mr. Flute started at once and wrote a fine advertisement — with 763 copies. But, when it came to handing them to likely looking people, he ran into a difficulty; how was he to recognize a likely prospect for a duck call? Then he had a very good idea. He would blow on a sample duck call and surely attract the right readers for his advertisement.

Well, that's just what he did. Mr. Flute set out with his advertisements under his arm, and every so often he would give a loud quack on his duck call! The scheme worked only too well. A keen sportsman, from Minneapolis, Minn., happened to be in town for a convention. He heard Mr. Flute's realistic quacking and shot him dead with a fowling piece. He said that he had mistaken Mr. Flute for a duck and that he was sorry.

The duck call manufacturer was a kindly man and was sad when he heard what had happened to poor Mr. Flute; but he still had to find someone to write his advertisements. He was vexed about the whole affair, and insisted on using newspapers in the future. The moral of this story is: It would have been far wiser for all concerned to have picked a good newspaper (like The Globe and Mail) in the first place. Lots of extra work and unpleasantness would have been avoided.

The Globe and Mail is ideal for advertising almost anything—duck calls included. Its readers are interested in all sorts of products and services, and chances are better than average that they can afford to buy the things they want.

Big Four Will Sum Up On Steel Tariffs

Here's a Summary of Arguments Presented to Tariff Board

OTTAWA (Staff)—Last chance to speak for and against an increase in iron and steel item tariffs will come October 22.

That's the date set by the Tariff Board for the final hearing here. It wants only a summing up, not repetition of argument already presented.

Representatives of the Big Four in steel — Algoma, Stelco, Dosco and Dofasco — plus specialty Atlas will reiterate these points:

1. The iron and steel Customs Tariff of 1907 plus amendments are out of date, need tidying up and adjusting.

The original tariffs were set usually as so much per ton. The rates are now out of date because of a creeping inflation that wasn't foreseen. The original protection granted doesn't exist.

2. New tariffs—ad valorem this time—should be set on many items. The basis should be the 1907 ratio.

Here are samples of the tariffs they ask for:

—structural (item 388). It is now free (British Preference), $3 a ton (Most Favored Nation) and $3 a ton (all others). Steelmakers want the section split into two parts to be (a) $10 (BP), $15 (MFN) and $20 (others), and (b) free, $7.50 and $20.

—hot rolled bars (378D). It is now free, $12.50 and $15. Steel wants $10, $15 and $20.

—skelp. (Used for welded pipe. Larger sizes are important in pipelines.) It's now free, $5 and $5. Steel wants another split, to be (a) the same for pipe 4½ in. in diameter or less, and (b) $10, $15 and $20 for larger pipe.

— plate. (380B — larger than 66 in. in width). It's now free, $6 and $6. Steel wants $10, $15 and $20.

—wire rods (379D—for various types of wire and fencing). It's now $2.25, $5 and $5. Steel wants $10, $15 and $20.

There are 96 such items to be dealt with individually.

3. "Drawbacks" and "end use" items should be eliminated.

A drawback is when a user of imported steel applies to the Government to have the amount of tariff refunded to him. Most drawbacks are 99% of the amount paid.

An "end use" item is one where steel is imported for a particular use, such as in agricultural machinery. The tariff isn't paid in the first place.

Both drawbacks and end use items, once the exception, are now common. It isn't known here why the distinction between the two.

Steel says they're so common as to make much of the tariff protection ineffective.

4. The phraseology of the 1907 Customs Tariff is out of date. It needs tidying up.

For example, item 377E — wrought or puddled iron — doesn't exist for all practical purposes. Only a little of it is made, in the U. S., because it is only used in very few instances such as in the Brooklyn pier where high resistance to corrosion is wanted. Steel has taken its place.

Then, too, there's now no "hoop" or "band" steel. Just "strip."

Steel suggested there be a rewriting to conform with American Iron and Steel Institute specifications so that the industry would know what was meant by various terms. Exact description is needed.

Since the hearings opened, Steel has come to see that this is impossible, however. If AISI terms were used, the tariff would be subject to all the changes AISI makes — and they're frequent. And AISI would be in a position to call the shot on Canadian tariffs.

It's presumed, however, that some re-writing will be recommended, rewriting which will keep AISI terminology in mind.

5. Creeping inflation has pushed up the price of what used to be the cheaper steel.

This is important since under the Tariff more expensive steels get less tariff protection. An example is steel billets for making seamless steel tubes.

Steel wants the original protection returned.

6. Canada's steel industry is vulnerable. There's no longer adequate protection from low-cost, low-price foreign production.

In time of recession our industry will suffer.

(The U. S., Steel says, can make enough steel for annual Canadian use in two weeks.)

Opposition Arguments

Ranged against Steel's applications for a return to old levels of protection are Canadian users of steel and, for instance, British steel manufacturers. Included are dozens of interests such as the Canadian Auto Chamber of Commerce and the British Iron and Steel Federation.

They will emphasize:

1. Canadian Steel has been healthy and prosperous since World War II, except for a brief period in 1954, and is doing well under existing protection.

2. There's a shortage of steel now — Steel is producing at near capacity — but users can't get all they want, particularly in special grades (i.e. for saws).

This condition will last for several years.

3. In the cases of some steels, the profit margin is so narrow—because the quantity produced is so limited—there isn't a hope of getting a similar product from Canadian sources.

And, where the producers of such steel are few, it would be unwise to force users in Canada to rely on a single Canadian source. Where would the user get a supply if the producer was tied up by a strike?

4. End use and drawback items are good. By them, steel users who can qualify for them are able to persuade Canadian steel suppliers to supply at a competitive price under threat of import.

5. A tariff increase would cut into the secondary user's own margin of profit — said to be narrow already.

By upping the price of steel, the price of materials used goes up. But the user can't up his own price because his own production must face foreign competition.

An example is said to be the petroleum industry. The circle: steel goes up, pipe goes up, drilling goes up, the price goes up, imports of oil go up.

6. Tariff increases would amount to a breaking of Canadian agreements under General Agreement on Tariffs and Trade.

(Steel charges its industry has been discriminated against. It says Canada has used steel tariffs too much at the international bargaining tables, that half of the 94 items are already bound against increase under the agreement.)

This would mean for practical purposes a unilateral withdrawal from GATT — a direct reversal of government policy and a step against the current of world trade opinion.

Report of the board is confidential like the Budget, expected in the spring.

It will keep in mind, as it considers its recommendations to be made to Finance Minister Harris, a concurrent problem of tariffs on pipe and tubing. Both inquiries are expected to be dealt with in the same report.

It will not keep in mind possible dumping by foreign steel makers. It has not been requested to do so by the Government. Dumping is looked after by other legislation.

But the board will take into account U. S. and European production which has highs and lows with corresponding price levels as they affect Canadian tariffs.

(Steel says U. S. dumps ends of runs into Canada. European makers have admitted privately that their prices sink below cost levels in times of over-production.)

Formal opening of the hearings was last November 7.

After several days of preliminary discussion by opposing sides, there was an adjournment to February.

In February hearings of about two weeks began and continued with intervals until May 23.

Pipe and Tubing hearings were held June 18-26.

B.C. Electric Empire Growing

(Continued from page 15)

requirement by 1980 of 5,850,000 hp.

"Let me repeat this sobering statistic. The areas we serve will need something of about 6 million hp of new generating capacity by 1980.

"If one applies an arbitrary but not unrealistic cost figure of $400 per hp to cover generation, transmission and distribution expenses, one arrives at a total capital cost figure of about $2,500 million for electrical expansion on our system by 1980."

The company's actual program will feed an additional 900,000 hp into the system by 1960. And the firm's economists will be keeping a very sensitive finger on the province's pulse to determine when the later stages of the 25-year plan will be put into effect.

Where will this great amount of additional horsepower come from. Most untapped accessible rivers can produce only a drop in the bucket, according to Mr. Grauer's calculation.

B.C. Electric hopes to get it from one or both of the continent's great untapped rivers—the Fraser and the Columbia.

The Fraser is virtually ruled out because through the years, engineers have never been able the escapement of spawning to come up with a plan to allow salmon up, over, around or through the dams needed to harness the river. The federal and provincial governments are against damming the Fraser as well as the powerful Pacific International Sockeye Salmon Commission. The Fraser must be saved for fish, and that's that, they say.

This leaves the Columbia River, that great stream which rises and flows hundreds of miles in B. C. before entering the United States and draining into the Pacific Ocean.

Ironically, it is the Columbia River which gives the best arguments against damming the Fraser. The fish interests point out that power dams erected by the Americans have virtually destroyed the Columbia's once vast salmon fishery.

Power companies have long eyed the Canadian Columbia and the consensus is that the best place for a dam is at Mica Creek, north of Revelstoke near the western side of the Big Bend.

To stake a claim on the right to build a dam at Mica Creek, B.C. Electric is undertaking surveys of the river. These will take two years to complete, and B.C. Electric is going to be the first to make an application to build the dam as it will be first with the necessary maps, facts and figures which the authorities must have.

The announcement that B.C. Electric would harness the Columbia was neatly timed as it was made on the day that Maj.-Gen. A. G. L. McNaughton, chairman of the International Joint Commission on Waterpower, announced that a dam at Mica Creek was feasible.

Would Cost $250 Million

If B.C. Electric gets the green light, the 700-foot high dam would generate 1,500,000 hp which would be brought to Vancouver area by a 450-mile transmission line costing $90 million.

Cost of the dam over the eight-year construction period would be $250 million.

The dam would be the key to a series of five dams that would be built on the Columbia by B.C. Electric. How many additional hundreds of thousands of horsepower the other dams would generate has not been announced.

The company has still not given up the idea of developing the Fraser despite opposition from every side.

Earlier this year, the company authorized a grant of $50,000 to the University of B. C. to study and report on the feasibility of hydro developments on the Fraser that would at the same time permit the spawning of salmon and the safe passage of the fingerlings (baby salmon) to the sea.

Mr. Grauer has said, "The Fraser is the next natural source of hydro for the Lower Mainland and southern Vancouver Island.

"Even a partial development of the river from the Moran site down would be of inestimable value to the future economic growth of this (Vancouver) business and residential heart of British Columbia."

So great are the problems revolving around possible harnessing of the Fraser and the Mica Creek job that the firm set up a special company, **Western Development and Power Ltd.** to handle the job. The new firm also has the job of attracting new industry to B. C. to use the power when it is generated.

In announcing the $50,000 grant to the University of B. C., and promising more if needed, Mr. Grauer warned of the urgency of the situation:

"At the present rate of growth, about 13% annually, our area will run out of potential hydro sites in less than 10 years unless development of the Columbia and Fraser is allowed."

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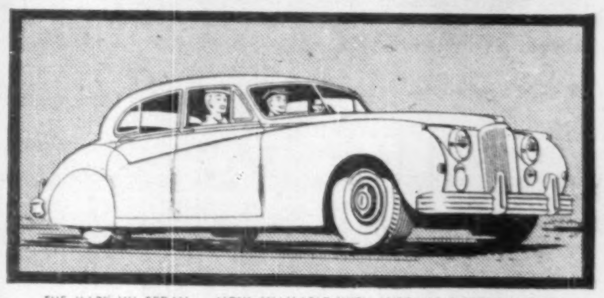
NEW SKYLINE

Mining operations like the one pictured are adding upwards of $10 Million to the annual economy of New Brunswick. Three years ago this province experienced a multi-million ton base metal strike in its northland. Prospecting, aerial surveys, diamond drilling, geophysical operations and mine plant construction followed at a rapid pace. Shipments of concentrates began in 1955. This is the background of New Brunswick's mining progress — and the meaning of her new skyline.

DEPARMENT OF LANDS AND MINES
HON. NORMAN BUCHANAN, M.C. MINISTER
W. W. McCORMACK, DEPUTY MINISTER

New Brunswick
new progress from an old heritage

JAGUAR



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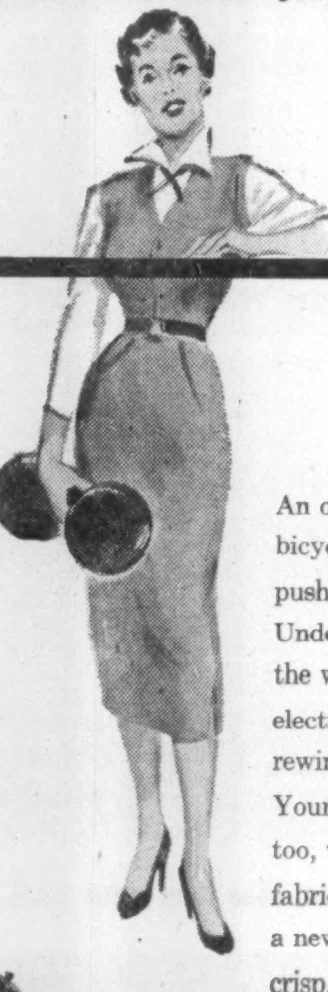

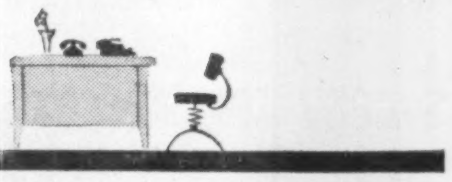

An ordinary typewriter is like a bicycle: *you* have to do the pushing. But with the new Underwood electric typewriter, all the work is done for you—by electricity. Even the ribbon rewind is electric.

Your work will *look* much better, too, when it's typed, with either fabric or carbon paper ribbon, on a new Underwood electric . . . crisp, clean, distinctive . . . right through a sheaf of carbon copies. Ask your boss to let you have the new Underwood electric demonstrated in your office—soon! No obligation—simply telephone your nearest Underwood branch.

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UNDERWOOD—*Typewriter leader of the world . . . Outsells Them All*

To know why MACLEAN'S is the one Canadian magazine that consistently interests businessmen READ these four behind-the-scenes articles in the September 29 issue.

POLITICS

Should we yield our rivers to the U.S.?

Here's the background story of the fight for water power on the Columbia and the Yukon, reported by **Bruce Hutchison,** who says it could become the biggest border hassle in our history.

OIL

The big splash hits Manitoba

An on-the-spot report from the newest Canadian boom town: Virden, Manitoba. A complete account of what's happening to the third prairie province to feel the effect of new oil discoveries — as seen from the small town level.

RELIGION

Is cash register evangelism clicking in the churches?

Here are both sides of the story about professional fund raisers who have helped pump sixty million dollars into Canadian churches. How do they operate? Are they effective? What do the churches think? Frank Croft gives the complete story on the Wells Organization and how it woos money from churchgoers.

INDUSTRY

The problem of NOISE

A scientific analysis of noise and its effect on productivity, mental and physical health. Just how rough is noise on man-hours?

National Advertisers Please Note: Just announced is a new circulation rate base of 565,000 for Maclean's, effective with the issue of March 2, 1957. This is an increase of 10.8% over the circulation rate base that came into effect last March and represents a growth in circulation of 33.4% over a period of five years. Advertising rates in March, 1957, will show a reduction in cost per thousand circulation.

MACLEAN'S

Who Gets That Higher Pay: Taxman, Inflation — Or You?

By VINCENT EGAN

You're making more money now than you were before the war, of course. But are you making as much more as you think?

If you've only doubled your salary since 1939, your purchasing power has gone down.

By how much? That depends on how much you earn, how many tax exemptions you have.

But with the tax collector siphoning off 10 or 20 times as much in 1956 as he did in 1939, and with inflation slicing the value of what's left, you need between $2 and $2.75 today to match the buying powe: of a 1939 dollar.

For example, a $5,000-a-year married man with no dependants in 1939 paid $144 income tax, had $4,856 left over.

Today, it takes $9,151 to achieve the same purchasing power. But, to have $9,151 to spend after paying a much higher income tax and old age security tax, the same childless married man has to earn $10,987.50.

Or, looking at the other side of the coin, a 1956 income of $5,000 would net the same man—married, no dependants — only $4,550 after taxes. That's worth $2,414 in terms of 1939 purchasing power. In other words, his 1956 net income would buy less than half of what it bought in 1939 ($4,856 vs. $2,414). This is the dilemma faced particularly by pensioners and others on fixed incomes.

In other income brackets, the story is the same but the degree is different. The accompanying table shows the after-tax income of single and married taxpayers, without dependants, who earned $3,000, $5,000, $10,000 and $20,000 in 1939. For comparison, it shows what must be earned today to achieve the same purchasing power as in 1939.

Few people are content simply to maintain the same real income as years go by. To taxes and inflation, a third factor must be added to make the comparison meaningful: The rewards that should come with increasing skill, judgment and experience. So far, no statistician has found an index for this factor.

In the U.S., the effect of the twin pressures of taxation and inflation has been much the same.

There, a married couple with two children who made $3,000 in 1939 must now earn $6,122 to maintain the same after-tax purchasing power. Taxes were $30 then, $669 now; loss through inflation would be $2,483.

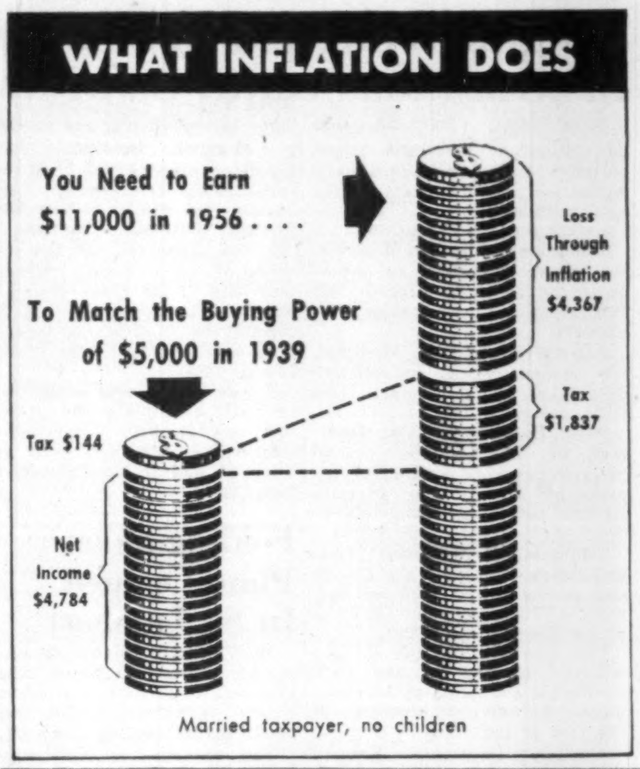
If the family earned $5,000 in 1939, they need $10,583 in 1956. Taxes have risen from $59 to $1,511, depreciation has taken $4,131.

If the father's 1939 salary was $10,000, it would take $22,428 to match it today. Taxes are 17 times greater: $4,562 vs. $269. Loss to inflation: $8,135.

If the same two-child family were in the $25,000 income bracket 17 years ago, a 1956 salary of $67,727 would allow them to remain abreast. Uncle Sam's share has increased from $1,727 to $24,998, while $19,456 has been lost to inflation.

For purposes of clarity, the figures used in the illustrations above ignore such factors as the varying provincial income taxes which were in effect in 1939 and in Quebec now, the 20% tax credit now granted on dividend income, and the exemptions which most taxpayers could claim — in 1939 as in 1956—for charitable donations and medical expenses.

The Canadian income figures represent gross income less federal income tax and old age security tax only, and adjusted in accordance with the change in the consumer price index.



How Inflation Hits Salaries

Status	1939 Gross Income $	1939 Tax $	1939 After-Tax Income $	1956 Equivalents Gross Income $	1956 Equivalents Tax $	1956 Equivalents Inflation Loss $
S	3,000	84	2,916	6,469	974	2,579
M		36	2,964	6,333	747	2,622
S	5,000	216	4,784	11,201	2,186	4,231
M		144	4,856	10,988	1,837	4,295
S	10,000	794	9,206	25,244	7,895	8,143
M		655	9,345	24,949	7,338	8,266
S	20,000	3,100	16,900	52,209	20,361	14,948
M		2,835	17,165	54,270	21,923	15,182

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Farmers Get Needed Cold Cash From Alberta's Hot Mustard

From Our Own Correspondent

LETHBRIDGE, Alta—Harvesting of Alberta's bumper crop of commercial mustard seed — the largest "hot crop" ever grown in Canada — is expected to be completed by the middle of October and should return farmers in the Lethbridge region almost $4 million.

Combined from an all-time Canadian record of 138,000 acres, the crop is expected to produce more than 110 million lb. of cleaned grain. Harvesting started early in September.

This year, for the first time, large-scale exports of mustard seed are being sent to Japan. One Lethbridge firm contracts to ship 4,500 tons of the Oriental variety of mustard seed to Tokyo. A heavy movement of the grain to the Far East is assured for the next few months.

Alberta exported token shipments of mustard seed to Japan from the previous two crops. These paved the way for substantial orders. Japan is using increasing volumes of Oriental mustard seed as a substitute for rapeseed, flaxseed and soybeans for yielding oil and feeds.

Most of the yellow mustard seed being harvested here this fall will go to manufacturers of prepared mustard and other mustard products in the U. S. and Eastern Canada.

Contracts this year assured farmers 5c per lb for yellow mustard seed making the No. 1 grade and on cleaned weight. The contract price set for the Oriental and brown varieties was 3c per pound.

Contracts issued by five seed firms having operations in Alberta this year totalled 29,500 acres for yellow mustard seed, 92,500 acres of Oriental variety, and 12,500 acres of brown variety.

Commercial mustard seed growing was introduced to Alberta 20 years ago from neighboring Montana as an alternative to raising low-priced wheat. The crop has become particularly popular with farmers since the development of continuing wheat surpluses and wheat marketing problems.

With harvesting of this year's crop at its height, an official of a seed contracting firm told The Financial Post: "Fantastic yields are being harvested, except from fields damaged by hail."

While the long-time average yield for yellow mustard seed in Alberta is 450 lb. per acre, this year's crop of that variety promises to average between 650 and 700 lb. per acre. Some fields that have been combined already have averaged so high as 1,400 lb. per acre.

Seed firms are taking delivery of the mustard crop as fast as it can be harvested, giving hundreds of farmers much-needed cash.

B.C. Oilfield Now Producer

From Our Own Correspondent

VANCOUVER — British Columbia officially became an oil producing province in July.

For the first time, the federal Department of Mines listed production from the oil fields of the Fort St. John area in the northern part of the province.

During July, 9,799 bbls. were produced from the Boundary Lake field 40 miles northeast of the northern town. Production is from three wells operated jointly by Shell, Gulf, Texaco and Mobile Oil. A fourth well is now on 30-day test.

The oil is being shipped to a small refinery at Dawson Creek which can handle about 3,000 bbls. daily.

OUR I.B.M. MACHINES NEVER GET TIRED!

People get tired simply because they are human.

But the 15 automatic I.B.M. machines we've got simply refuse to quit. The more we feed into them the better they like it. They are just as accurate in the evening as they are at crack of dawn (we work three shifts).

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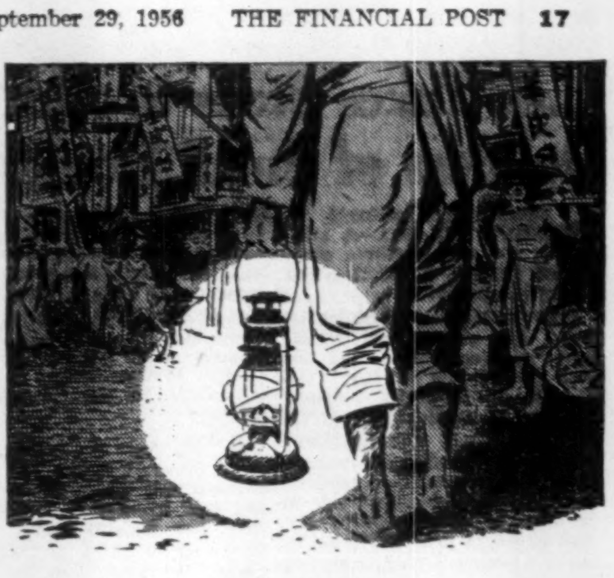

OIL FOR THE CANADIAN LAMPS OF HONG KONG

Chinese lanterns are fine, in their proper places, but when it comes to good, sturdy metal lamps, Hong Kong comes to Canada. Metal lamps, exported to no less than seventy-four countries, in 1954, are just a very small part of the great list of Canadian exports that have made Canada the world's fourth largest exporting nation. Canadian business and industry is big, and Imperial Bank of Canada maintains a steady finger on the pulse of this Canadian giant. When you need information or assistance on financial matters, see the Manager of any Branch of Imperial Bank of Canada. He will be pleased to help you in whatever way he can.

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NEW ISSUE

$3,000,000

The Protestant School Board of Greater Montreal

20-Year 5% Sinking Fund Bonds

Dated October 1st, 1956 **To mature October 1st, 1976**

Principal and half-yearly interest (April 1st and October 1st) will be payable in lawful money of Canada at any branch in Canada of the banks designated in the Bonds, at the option of the holder. The Bonds will be available in coupon form with provision for registration as to principal in the denominations of $500 and $1,000. The Bonds will be subject to redemption, other than for sinking fund purposes, at the option of the Board, as a whole, or in part by lot at par plus accrued interest on October 1st, 1966, or on any subsequent interest payment date on 30 days' prior notice.

Provision will be made for an annual sinking fund, invested in Bonds of this issue, sufficient to retire the full amount of the issue at maturity. For sinking fund purposes, Bonds of this issue may be purchased in the open market and/or may be redeemed by lot at par plus accrued interest at the option of the Board on any interest payment date on 30 days' prior notice.

Legal Opinion: Messrs. Heward, Holden, Hutchison, Cliff, McMaster & Meighen.

CERTIFICATE OF VALIDITY

Each Bond will bear a Certificate of Validity signed by the Minister of Municipal Affairs of the Province of Quebec, or by a person specially authorized by him. Every bond issued by a school corporation in virtue of a resolution approved by the Minister of Municipal Affairs, bearing the Seal of the Department of Municipal Affairs and such Certificate, shall be valid, and its validity shall not be contested for any reason whatsoever. The Certificate will also state that the Government guarantees the validity, but not the payment, of such bond. This issue is to be authorized by the Provincial Secretary and the Minister of Municipal Affairs upon the recommendation of the Superintendent of Education and by the Quebec Municipal Commission.

PURPOSE OF ISSUE

The proceeds of this issue will be applied towards the cost of a school site and new schools.

SECURITY

These Bonds are direct obligations of The Protestant School Board of Greater Montreal (formerly The Montreal Protestant Central School Board).

Sections 19 and 22 of its Act of Incorporation, 15 George V, Chapter 45 and amendments, which provide for the Board's borrowing powers and the security for the repayment of loans effected by it, read as follows:

19. Besides the power which corporations have under the Civil Law, the Central Board may borrow and guarantee or become security for the loans, debts and obligations contracted by each of the local boards affected by this Act. It may also give and accept bonds for the payment or guarantee for the payment of any sum of money due by or to it.

22. Every loan made by the Central Board shall be on the guarantee of the immoveable property belonging to Protestant property-owners and taxable under Section 16, in proportion to the value of the taxable property of each of the said school municipalities.

These Bonds accordingly will be direct obligations of the Board and will be issued on the security of the immoveable property referred to in the above quoted Section 22.

In the opinion of Counsel, the Bonds of this issue will be legal investments for trustee funds in the Provinces of Quebec and Ontario, and will be investments in which the Canadian and British Insurance Companies Act states that companies registered under Part III thereof, may, without availing themselves of the provisions of sub-section (4) of Section 63 of the said Act, invest their funds.

Particulars relating to the financial position of the School Board will be found in the official prospectus which is available upon request.

PRICE: 97.00 and accrued interest to yield approximately 5.24%

SUBSCRIPTIONS WILL BE RECEIVED SUBJECT TO REJECTION OR ALLOTMENT IN WHOLE OR IN PART, AND THE RIGHT IS RESERVED TO CLOSE THE SUBSCRIPTION BOOKS AT ANY TIME WITHOUT NOTICE. IT IS EXPECTED THAT THE BONDS IN DEFINITIVE FORM WILL BE READY FOR DELIVERY ON OR ABOUT OCTOBER 26th 1956.

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McLeod, Young, Weir & Company Limited
Bell, Gouinlock & Company Limited **Greenshields & Co. Inc.**
Mills, Spence & Co. Limited **Royal Securities Corporation Limited**
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W. C. Pitfield & Company Limited

The statements contained herein are based on information obtained from official sources but are in no event to be construed as representations by us.

September 19th, 1956.

U.S. Takes Steps to Aid Builders of Small Homes

Special Correspondence

WASHINGTON, D.C.—A small shot in the arm has been given to the sagging American home building industry.

Like Canada, United States has found the number of housing starts running well behind last year (16% below for the U.S.). This is an especially unhappy situation in an election year for the Eisenhower Administration. As a result, the Administration relaxed its anti-inflation program just a little by lowering the down payment on houses costing less than $9,000. A prospective home-buyer now needs only to put up 5% instead of 7%. Several other steps are aimed at making more mortgage money available.

A few months ago in a step in the same direction, the U.S. began underwriting a program of trade-in houses. A home owner now is able to trade in his present home for a new one, just as he trades in his present car.

Economists, however, don't think many more houses will be built as a result of the Government's new steps. "It's a step in the right direction and White House recognition of the industry's problems," said Joseph B. Haverstick, president of the National Association of Home Builders. But he said there are few $9,000 or less homes built these days.

Federal Housing Administration Commissioner Norman P. Mason, however, said last year 27½% of all new homes financed on FHA-insured mortgages were in the range of $9,000 or less.

It would be wrong to ascribe the Administration move as one designed only to win votes on the first Tuesday in November. Nevertheless it is apparent that those owning or wanting to own homes costing $9,000 or less would be in the low-income groups and consequently likely to cast Democratic ballots in the election. The Administration would not be displeased about offering a little comfort to these voters so they can share in the "Republican prosperity."

In addition to cutting the down payment to 5%, the Government now will permit savings and loan associations to borrow from the Federal Home Loan Banks up to 12.5% of their deposits. Previously they had been limited to 10%

The Government now will require financing institutions selling their mortgages to the Federal National Mortgage Association to buy only half as much FNMA stock as they have been purchasing. They have been required to buy $2 in FNMA stock for each $100 of mortgage sold. This rate now goes down to $1 for each $100.

The Government now will permit FNMA to make bigger advance commitments on mortgage purchases. The agency now promises a builder who can't get funds that it will buy 94% of a future mortgage instead of 92%.

Having taken these steps, the Federal Housing Administration holds out a carrot, offering more possibilities to the lower priced housing. It says, "Currently, FHA is reviewing its minimum property requirements for several of the programs in this price range ($9,000 and less) to see if any reductions in standards may be effected without adversely affecting the value to the buyer."

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Bridges, Dyke, and Equipment In $8 Million Seaway Contracts

MONTREAL (Staff)—Another $8 million of contracts issued recently by St. Lawrence Seaway Authority brings the total to the $156 million mark.

Latest contracts went to:

Dominion Bridge Co. Montreal, for the construction of superstructure for two vertical lift bridges, near Caughnawaga ($3,031,097).

Atlas-Winston, Ltd., Montreal, for channel work, construction of dyke, embankments and CPR superstructure ($3,259,525).

Atlas Construction Co., Montreal, for the construction and maintenance of temporary approaches to Honore Mercier Bridge and demolitions ($864,908).

Timberland Machines Ltd., Woodstock, Ont., for the supply and setting up of "stiff-leg derricks"—10 with winches—at locks of the Seaway ($649,000).

The two vertical lift bridges referred to are for the CPR double track crossing at Caughnawaga. An overhead clearance of 120 feet is required.

Another important Seaway move last week was the meeting in Montreal between Lionel Chevrier, president of St. Lawrence Seaway Development Corporation, and officials of **New York Central Railroad.** Purpose: to sign an agreement for the purchase of the railroad's right-of-way and lands from the U.S. mainland to Cornwall, Ont. including the international bridges. This resulted from talks opened late in 1954.

A new high level bridge will be built to replace the present one now in use. Construction bids will be invited shortly and work is due to be finished by July, 1958.

Folding Door Plant Opened In St. Lambert

MONTREAL (Staff)—Quebec's rapidly expanding South Shore area last week officially welcomed a new enterprise to the ranks of its manufacturing concerns.

The company is **New Castle Products (Canada) Ltd.** which manufactures folding doors at a $500,000 plant in St. Lambert, Montreal South. The 40,000 sq. ft. plant, which contains upward of $100,000 in machinery, has a capacity of about 800 doors daily. The doors are fully manufactured at the plant from raw materials purchased in Canada, company reports. Most are custom made to specifications provided by the purchaser.

The company first started production of the doors in Montreal East in 1946. At that time most parts were imported from the U.S. Later the factory was moved to larger premises in Longueuil where company undertook manufacture of some parts.

The doors are manufactured under licence from a U.S. company. New Castle products officials reported production of the St. Lambert plant will be sold in Canada only.

Pipe Supply Question Mark Union Gas Job

Union Gas Co. of Canada officials are vigorously pushing plans for a 1957 completion of the first major step in an estimated $20 million natural gas transmission program for southwestern Ontario.

The big problem is to obtain 150 miles of large diameter pipe to connect the Lambton County storage fields with the city of Hamilton. Right now the timetable target is to complete the pipeline and convert Hamilton's present — largely manufactured gas — system to natural gas by next fall.

Union Gas officials are quite hopeful that they can obtain the required pipe in 26 inch diameter size in time to complete the job for next winter's heating period. All things being equal, however, they would have preferred larger diameter pipe—32-inch diameter. It's all a matter of long-term economics involving additional compressor stations as market expands and initial cost of pipe.

The supply problem is primarily one of obtaining steel plates in great enough widths to roll into the 32-inch diameter pipe. Plates are in tight supply all over the world. A considerable tonnage from pipe mills is already booked well into 1957.

Union Gas can start importing U.S. gas under the new, greatly-expanded contract negotiated with **Panhandle Eastern Pipe Lines** at any time. Company does not plan to step up imports materially, however, until either the big potential Hamilton market has been connected and/or additional storage facilities have been established in the Dawn storage field in Lambton County.

Company also plans to supply such major centres as Kitchener-Waterloo, Guelph and Stratford with natural gas, via the new pipeline.

N.B. Offers First 5% Provincial Issue For Years

MONTREAL (Staff) — An issue of $6 million 4½% bonds of the Province of New Brunswick, dated Oct. 15, 1956 and due Oct. 15, 1971 are being offered by three syndicates headed by **Dominion Securities Corp., Nesbitt, Thomson & Co.,** and **Bell, Gouinlock & Co.** Price is $94¾ to yield 5%.

Proceeds of the issue will be used as follows: $2.2 million advance to the N. B. Electric Power Commission; $1.3 million for permanent bridges; $1,505,000 for permanent roads; $562,000 to provincial hospital at Campbellton; $300,000 to University of New Brunswick, and $133,000 for a polio clinic at Fredericton.

An annual sinking fund of 2% of the bonds issued in respect to the N. B. Electric Power Commission and 3% of bonds issued for general purposes will be established. Bonds are non-callable until 1968.

Financial circles in Montreal comment that this is the first direct Canadian provincial issue to be offered at a yield of 5% in many years.

Offer $3 Million Bond Issue For Montreal Schools

MONTREAL (Staff)—An issue of $3 million 20-year 5% sinking fund bonds of the Protestant School Board of Greater Montreal is being offered by a syndicate headed by **A. E. Ames & Co.** and the **Bank of Montreal.** Price is 97 to yield approximately 5.24%.

Proceeds of the issue will be applied toward the cost of one school site and two new schools.

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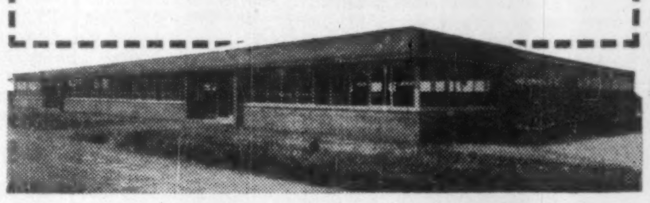

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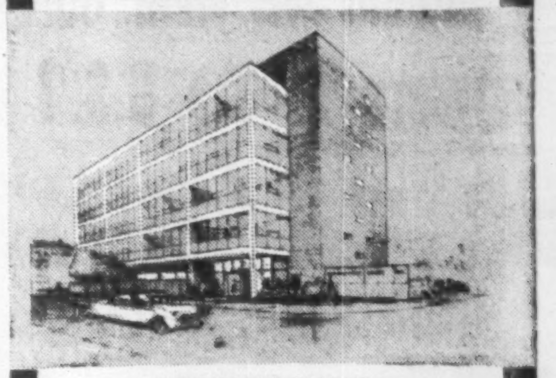

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Industry Takes A Long Look At Shape of Things to Come

Industry took a firsthand look last week at the shape of things to come in Canada and liked what it saw.

The occasion was a three-day tour by 250 members of Toronto Board of Trade of major projects in Ontario which are expected to spur growth and economy throughout Canada over the next quarter-century. The tour took in the atomic energy projects of the Chalk River area, the $35-million reconstruction of the nearby military base at Petawawa Camp, and the $900-million St. Lawrence Seaway and power development.

It was probably the first time that so representative a group of industrialists and businessmen had visited the projects.

In each case, they heard the story of progress and potentialities from top-ranking authorities and were back in their offices this week with practical knowledge which could influence the forward plans of many companies to a considerable degree.

This is the completion timetable for the projects visited:

Chalk River — The big NRU atomic reactor, intended primarily for research, is scheduled to come into operation this year. It will give Canada top atomic research facilities, produce isotopes for industry and significant quantities of plutonium.

Des Joachims — This country's first atomic power reactor, known as NPD, is scheduled for completion in 1959. It is experimental, is not expected to produce power at costs competitive with other power-producing plants here, but is a major step in the achievement of that goal.

The Seaway—Due for completion in 1959 with power output starting about a year before that. It will provide 27 ft. minimum depth for shipping through to the head of the Lakes, and 2.2 million hp of electric power to be divided equally between Ontario Hydro and New York State Power Commission.

Petawawa Camp—Slated to be the most modern army training base outside Gagetown, the utilities are mostly in now and construction of military installations, houses and schools, etc. is proceeding. The reconstruction will cover about five years.

A Power Price Goal

At the official sod-turning ceremony in connection with the building of NPD at Des Joachims, the visitors were told by Minister of Trade and Commerce C. D. Howe:

"In those regions of our country which have exhausted their hydro sources and where cheap conventional fuel sources are not readily available, power costs will inevitably rise unless an alternative source of energy is found. Nuclear energy is such an alternative, and because it can be produced in almost unlimited quantities it establishes a ceiling for future power costs."

While the NPD reactor will not produce power at costs competitive with the cost of power produced in large thermal stations in Central Canada, it is a step in the achievement of this goal. The goal is nuclear power at a cost not greater than six mills per kilowatt hour.

During the tour of the seaway project, the party heard Lionel Chevrier, president of the St. Lawrence Seaway Authority, forecast the tripling over 1954 totals of overseas shipping trade to Great Lakes ports in the first year of the Seaway operation.

He said the present 14-ft. canal system carried about 760,000 tons of overseas trade in 1954. That figure will at least triple, he believes, when the seaway opens with 27-ft. navigation in 1959, and some economists see it being increased eventually by as much as 25 times.

He also told them: "For us in Canada, I feel the most important consequences of the Seaway will be to turn the attention northward of industry and the general public of the middle western states. Already there is evidence from the lower St. Lawrence to Lake Superior of new industrial expansion based in large part on the conditions to be provided by the Seaway."

New Rifle

At Petawawa, the party saw a display of infantry and tank weapons and a tactical demonstration exercise but the highlight was the operation and display of the new FN rifle of Belgian origin which is shortly to be issued to Canadian forces. The rifle, with certain modifications, is being turned out from Canadian plants. One was on display alongside the soldier's old friend, the Lee Enfield.

While the army representatives unanimously praised the much greater firepower, accuracy and other qualities of the new weapon, the visiting businessmen did not fail to note the price tags for the two rifles, shown for taxpayers' information. The FN was quoted at just over $170 and the Lee Enfield at under $40.

Multi-Million Dollar Gas Plant At Lethbridge

LETHBRIDGE, Alta. — Construction work on the multi-million dollar plant to extract valuable byproducts from Pincher Creek wet-gas field and send the dry gas on the way to the Trans-Canada pipe line now is more than 60% completed. Hopes of officials are that the new industry will go into production in December.

Because of delays in the delivery of materials for the gas treating plant, work on the development is two months behind schedule, according to Frank R. Sartor, superintendent on the project for **Stearns-Roger Engineering Co.**, of Denver, which holds the general contract for this plant.

More than 400 men are employed on the entire development, which includes the building of a 20-mile railway branch line from Brocket to the industrial site by the **CPR** at a cost of over $1 million.

General expectations are that this year's expenditures will approach $10 million, the total including more than $1 million for the nearly-completed sulphur plant, well over $4 million for the gas treating plant, around $1 million for a new gas well being drilled a mile west of the industrial site.

When the industry first goes into production, it will remove sulphur and distillate (light gasoline) from the wet gas and the residue will be injected back into the field through the A. Bonertz well one and a half miles southwest of the plant. This injection well now is being reconditioned with larger tubing.

Each of the nine wells drilled in the field cost more than $1 million and was put down to an average depth of 12,500 feet. The 10th well, being drilled on the Ward farm, is to be put down to 11,500 feet. During the first 26 days of drilling, 2,230 feet of hole were made, drilling proceeding round-the-clock and seven days a week.

Much of the sulphur production is to be shipped to the $23 million fertilizer plant now being completed at nearby Medicine Hat for **Northwest Nitro-Chemicals Ltd.**

The production of byproducts at the outset is expected to be 225 long tons of sulphur and 2,200 barrels of condensate daily.

Canadian Elected To Claims Executive

John Kirkendale, claims manager, **North American Life Assurance Co.**, Toronto, was elected this week to a two-year term on the executive committee of the International Claim Association. Joining North American Life in 1929, 46-year-old Mr. Kirkendale has headed the company's claims department for eight years.

Elected at the Association's annual meeting in Fort Monroe, Virginia, he is one of half a dozen Canadians to win such an appointment since the organization was formed in 1909. Two Canadians have served presidential terms in this association to which almost all Canadian life companies belong.

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REPRESENTATION

Structural steel and plate fabricator in Ontario seeks contract with engineering firm to act as representative for the Province of Quebec.

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SACRIFICE SALE

1. Plating, Buffing and Spray Shop
2. Machine Shop (Stamping & Die Casting)

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BOX 15, THE FINANCIAL POST, TORONTO

CAREERS

This is Canada's national meeting place for executives who have positions to offer, and for those who have ability to offer

Export Sales Wheat, Barley Continue Good

OTTAWA (Staff)—We're selling more grain this year than last in overseas markets and the outlook for continued bigger sales is good.

Here are the latest (September 12) export figures:

—Wheat and flour. Up from 30.8 million bu. to 39.8.

—Oats. Up from 1 million bu. to 1.6.

—Barley. Up from 2.6 million bu. to 10.3.

—Rye. Down from 1.5 million bu. to .9.

—Flax seed. Up from .3 million bu. to .8.

Total for the period from August 1 to mid-September, in both years shows we're ahead this year 17.2 million bu. — up from 36.2 million bu. to 53.4.

At mid-week estimates of the wheat crop indicate it will be down slightly to about 475 million bu. Hail damage (FP, September 22) mainly in Manitoba and wet weather throughout the prairies reduced estimates from about 490 million bu.

Also at mid-week, estimates were that the crop is about 75% in. And it'll be down slightly in quality because of frosts and poor weather.

Over last week end, a brisk 25 mph wind dried up much of the land and permitted farmers to go back to harvesting.

The port of Churchill on Hudson Bay is set for a record shipment of grain before its closing next week. Estimates are that about 16 million bu. will leave through the port, up from about 13 million bu. last year. Most will go to the U. K.

Grain carry-over is still high. Here are the figures and the comparable figures last year and the '46-'55 average:

—Wheat. At 527.5 million bu., up from 499.7 and 234.3.

—Oats. At 116 million bu., up from 84 and 86.

—Barley. At 107.5 million bu., up from 91.5 and 62.2.

—Rye. At 15 million bu., down from 18.5 but up from the '46-'55 average of just 8.6.

—Flax seed. At 2.3 million bu., up from 1.2 but down from '46-'55 average of 3.2.

Chief reason for hopes of continued good sales is poor weather in Europe. Heavy rains in the U. K. which have lasted several weeks have hit the crop hard.

GENERAL MANAGER AVAILABLE

Nineteen years widely diversified experience in several chemical specialty and related industries as plant manager and asst. general manager, including quality control, methods, industrial relations, supervisory training, plant layout and construction. All phases plant management, company reorganization, advertising, sales promotion, budgeting, etc. Chemical graduate, age 40. Excellent health and character, efficient, good administrator, abstainer. Ready for general management of medium size company.

BOX 16, THE FINANCIAL POST, TORONTO

WRITER
Required for Large Electrical Organization with Head Office in Toronto

At least five years' writing experience, preferably in the newspaper and magazine fields, to assist in Executive writing assignments, such as speeches, feature articles, reports, and some editorial research.

Full employee benefits. Salary ranging from $4,000.00 depending on qualifications and experience.

Apply: Stating age, qualifications and experience to Box 7, The Financial Post, Toronto.

Price Hike, More Power for Metro

American Motors' new 1957 English-made Metropolitan hit the Canadian car market this week. Suggested retail price is up about 4%, in line with the expected trend for '57s.

The new Metro has 24% more power, travels up to 45 miles per gallon. It has a new oval-shaped cellular-appearing grille. A side molding begins at the headlight, extends toward the rear, dipping to the lower portion of the car about halfway back. American Motors says demand for the little car has been outpacing supply.

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SEEKING EMPLOYMENT IN MEXICO City with Canadian or American concerns, leaving Oct. 13/56. Age 30 — Previously employed with outstanding Canadian Oil Company in Production Accounting. Wife — Mexican. Box 10, The Financial Post, Toronto.

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COMMON CARRIER CLASS C PERMIT —General Commodities—from and to Toronto and from and to Windsor, Ontario, Canada. Box 3, The Financial Post, Toronto.

EXPERIENCED MANUFACTURERS' AGENTS. Have established connections with chain and departmental stores, also wholesalers. With our merchandising experience, we can increase your sales volume. Our references will prove it. Representative in Ontario and Quebec, Box 11, The Financial Post, Toronto.

ACCOUNTING PRACTICE REQUIRED in small City or Town in Ontario by Chartered Accountant. Box 5, The Financial Post, Toronto.

TENDERS FOR MUNICIPAL DEBENTURES

TENDERS WILL BE RECEIVED for the sale of One Hundred Thousand Dollar ($100,000) Debenture by the Municipal Corporation of the Township of Colchester North. Proceeds of the debenture issue will be used to erect a new central school for the Colchester North Public School Area Board.

Debentures will be for twenty years. The capital expenditure has been approved by the Ontario Municipal Board as of August 27th, 1956.

Bids will be received up to three p.m. on Monday, October 1st, 1956.

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Township of Colchester North,
R.R. #3, Cottam, Ontario.

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Alterations to suit. Reasonable rent. For further information contact —

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Well qualified and experienced executive with Engineering training shortly becoming available. Has built up well known sales organization in Canada in Mechanical equipment. Wide experience includes production and works management. Well acquainted with modern management techniques. Age 40, good appearance and personality. Would like general management of small business contemplating expansion or setting up of new Canadian operation for U. S. interests. Would locate anywhere but Eastern Canada preferred.

Box 9, The Financial Post, Toronto.

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Chartered Accountant with several years senior industrial experience in administration, sales, accounting, finance, credit, and related company activities. Successful background as corporate officer and a thorough knowledge of Canadian business practise and legal requirements. Excellent references as to competency and ability to co-operate smoothly with associates, customers and other departments. Anxious to relocate for broader scope or future growth.

BOX 14, THE FINANCIAL POST, TORONTO

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seeks executive sales position

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Write directly to advertiser

BOX 8, THE FINANCIAL POST, TORONTO

FORD MOTOR COMPANY OF CANADA LIMITED
HEAD OFFICE — TORONTO, ONTARIO

There is a senior position available in our Manufacturing Staff for a Manager, Machining Process Department. Applicants should have broad experience in the planning and acquisition of machine tool equipment. Management or Supervisory background in the field of machining axles, engines or transmission, and a broad general knowledge of automation and its principles is essential.

Experience in cutting tool research and application would be desirable. We believe that the successful applicant should have a minimum of ten years' experience in this field and salary commensurate with ability and experience can be expected.

Additional company benefits include: pension plan, group life, medical, and hospitalization insurance; sick leave policy; etc.

Please apply in writing stating experience and educational background to:

Ford Motor Company of Canada Limited
120 Bloor Street East,
Toronto, Ontario
Attention: Mr. Byers

MANAGER OF OPERATIONS

Position available for University graduate in mining engineering or ceramic engineering, preferably citizen of Canada, for Ontario and Quebec nonmetallic mining operations of division of U. S. corporation. Duties and responsibilities will include planning and administration, public and labor relations, study and recommendation of new mineral ventures for the corporation, and acting as the corporation's representative on province matters. Prefer man age 35-45 who has experience as assistant manager in large operations or as manager of smaller mine. Please give complete details in reply which will be held confidential. **Box. No. 12, The Financial Post, Toronto.**

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by leading machinery manufacturer to contact established industrial accounts in the Montreal-Ottawa area. Permanent position offering excellent opportunity for competent man to become associated with a progressive organization. Some knowledge of French desirable, but not essential. Graduate preferred. Age 35-45. Substantial salary plus commissions and bonus. Car supplied by Company. Income $8,000.00 to $12,000.00 depending on qualifications and experience.

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International company located in Western Ontario requires chartered accountant for position with good prospects for promotion.

Preferable age 30-35. Salary will depend on experience and qualifications.

Replies, which will be treated in confidence, should state required salary, personal particulars, as well as education and experience.

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The services of a recently qualified man interested in a career in the retail field. The position offers variety covering such phases of control work as statistics, accounts receivable, accounts payable, traffic, internal audit, payrolls, and research.

The business is an expanding one which demands the applicant must be prepared to move from one city to another. Opportunities to advance are excellent.

The applicant should be under 27 years of age, married, and in good health.

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What's New

New products, new uses, new ideas, new money-makers. We report them here and invite your contributions. Write to 481 University Ave., Toronto.

Car Navigator

Speed guide for automobiles, developed in Sweden, registers time, speed and distance. Automatically converts into valuable information. Tells at a glance how far driver has gone on his route, and whether he is on his time schedule.

* * *

For Cool Tool

Inexpensive mist coolant system eliminates dry methods, increases cutting speeds, increases life of tool, and permits better finishes, claims the manufacturer. Can be applied directly to cutting edges. Features large coolant strainer, filter on outlet tubing, durable coolant lines, slide cover, mist control knob and flexible nozzle.

* * *

Pressed Into Savings

Austrian invention permits the use of waste materials such as wood shavings, sawdust, peanut waste, cotton waste, etc. for articles with high walls as well as conical and round boxes of all sizes and hollow items (saucers, ash trays, fruit bowls, trays, etc.) Canadian distributor sought.

* * *

Sturdy Straw

New rubber hose for removing hot, abrasive chips of brick and sand from brick curing kiln to a large vacuum cleaner has specially fortified "stomach" to resist abrasive action of particles. Hose now being tested at a Canadian plant, has stood up to more than a year of constant use. Competitive hose tested at the same plant was destroyed in one day.

* * *

Checkup for TV Tube

TV tube tester for home use enables owner to tell at a glance if he will have to buy a new tube. Tester's cord is plugged into an electrical outlet and tube placed in the socket. Pilot light diagnoses tube's condition.

* * *

True-Grip Zip

Canadian, all-nylon toggle for use in the garment industry—for sleeping bags, parkas, arctic jackets, etc—cannot jam, freeze tight, get out of kilter or fail to perform, and ice won't adhere to it, claims the manufacturer. With its additional features, it is still "less expensive than equivalent brass toggles now on the market".

* * *

De-Cap or Re-Cap

Simple combination bottle-can opener, also does a "factory-tight" job of re-capping and resealing a bottle with the original cap. Cap, which has been left in the opener is replaced by pressing down on the bottle. Resealing is done by pressing the other end of the gadget down on the cap. Handy kitchen item comes with magnetic wall bracket.

* * *

Burn Extinguisher

New treatment for burns is protective spray. Dispensed, by push-button bomb, healer contains analgesic agents to relieve pain and hexachlorophene to prevent secondary infection. Reduces swelling. Isolates affected area and keeps skin moist and soft. Eliminates need for bandages and dressings, it's said.

* * *

Charged for Even Spread

British electrostatic crop dusting machine, that can be carried and operated by two men, gives each particle of dust a positive charge by passing it through a probe charged with a high positive potential. The plant to be sprayed is induced with a negative charge so that positively charged dust particles cling to it. But since like charges repel one another, the dust particles move apart and become evenly distributed over the plant.

* * *

New Catalogues

Air Reduction Canada Ltd., Montreal has published a 281 page manual of Design For Arc Welded Steel Structures. Brings together in one book authoritative data and information on the subject. Partial text includes fundamentals of design, types of welds and joints, estimating cost of welded structures and proper electrode selection.

National Research Council, Ottawa announces the latest Better Building Bulletin, a 32-page illustrated booklet on Insulation of the Home.

Netherlands Economic Information Service, The Hague, Netherlands announces the 1956 edition of Factories of Capital Goods in Holland. Gives a quick picture of some leading manufacturers of capital goods in The Netherlands and the articles they produce and export.

Canadian General Electric, Toronto, has published an illustrated handbook for business and municipal governments, showing the value of proper use of Christmas lighting. Outlines the direct dollar earnings that can be realized with correct lighting in street, shopping centres, commercial buildings, retail stores, etc.

R. L. CAVANAGH

formerly assistant director, Department of Engineering and Metallurgy, Ontario Research Foundation, has been appointed president, Non-Destructive Testing Corp. (Canada) Ltd., Toronto.

263,000 Tons Is New Kraft Mill Capacity

MONTREAL (Staff)—Canada's pulp and paper giant, **Canadian International Paper**, has just officially unveiled La Tuque mill, in which the company has invested over $66 million.

C.I.P. purchased the mill and woodlands two years ago from **Brown Corp.** Since that time $20 million has been spent on the mill for equipment and facilities for the manufacture of kraft board and paper. Prior to the expansion program, the mill manufactured only kraft pulp.

The mill now employs 1,400 persons, an increase of about 500. The payroll is $7 million.

Capacity has increased to 263,000 tons per year, of which 115,000 tons is kraft board and paper, with the balance kraft pulp. Increase in capacity is about 88,000 tons.

The mill was opened by Quebec Premier Maurice Duplessis.

LABOR AND THE LAW

This Union Officer Wanted Super-Seniority Protection

Significant judicial, grievance and administrative decisions in the labor field are reviewed in this regular Post feature. Principles basic to industrial relations, unemployment insurance and labor law are highlighted. Here is another case:

Should union officers have special privileges protecting them from layoffs — a kind of super-seniority?

This question was brought up — though not fully answered — in this case.

Here's what happened:

Buster was a union officer in a steel plant. A layoff became necessary and Buster was laid off according to strict seniority. He could have had a job in a classification lower than his own but refused.

Instead, he and his union took the matter to an arbitration board.

They argued that the contract with the company demanded preferential treatment for union officers.

This was the relevant clause:

"(Union officers) who are employees of this company will be given preferential service during layoff for the purpose of carrying on their union duties, provided that any such officers . . . can satisfactorily perform the jobs available during such layoff. . . ."

The company, of course, claimed the layoff was properly in line with seniority — Buster was the least senior man in his classification. It argued that two other cases where some preference was given union officers resulted from exceptional circumstances, not from application of a general rule.

The Board refused to reinstate Buster, as he asked.

There was no doubt that the contract attempted to give union officials some kind of special status. But the wording of the relevant clause was so general as to prevent a specific interpretation which would, in effect, negate seniority rights of other men.

Ordinarily, therefore, the clause would apply in cases where the rights of two men were equal but one was a union official.

Obviously, if greater preference was desired, the company and union should have been more explicit in writing the contract.

Source: Labor Arbitration Cases published for the Central Ontario Industrial Relations Institute by Cartwright & Sons, Toronto, 29-2-56, p. 48.

N.B.'s Marble Limestone Grit Proves Good For Laying Hens

From Our Own Correspondent

FREDERICTON, N.B. — Recently opened up deposits 60 miles north of here are giving Canada its first marble limestone grit plant.

A Dominion Experimental Farm report made public after 3½ months of experiments gives the "green light" to **York Marble & Aggregates Ltd.'s** grit for laying hens.

Tests over the period, the Federal Government's local station reports, show that marble from the company's Temperance Vale deposits contains sufficient calcium to do away with the need of adding a calcium compound, such as oyster shell, to grit for egg production.

Experimental work, the report states, indicates that New Brunswick marble limestone grit is as good, if not better, than the insoluble (granite) grit and oyster shell combination. It could replace the imported materials now used by the Canada poultry industry.

The marble limestone used in the experiments, the report sums up, proved to be a satisfactory source of calcium for egg shell formation and also for grit with an all-mash ration. The long-term results on egg production and feed efficiency where it is fed to hens receiving both mash and whole grains has not been definitely established, but abrasion tests show the marble to be suitable as a surfacing material for roads and walks, and it should, therefore, possess adequate grinding properties to make it suitable as grit for laying hens receiving both mash and whole grains.

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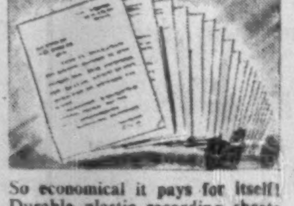

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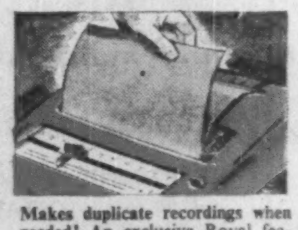

Makes duplicate recordings when needed! An exclusive Royal feature! Insert *two* special thin recording sheets and the Vanguard makes simultaneous copies—one for transcribing, another for reference, mailing or wherever needed.

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"Your wire of May 5

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The Case For Higher Railway Rates

CPR's Problem: Where Will The Next $1.3 Billion Come From?

Running a railway takes money. Tracks, ties, bridges, buildings, rolling stock—they all wear out in time. The CPR will spend nearly $100 million in each of the next 15 years on equipment needed to ensure safe, efficient service. Of this, about 60% will come from retained earnings.

Last year, CPR earned only 2.88% on shareholders' equity in its rail operation. It wants to do better than this, and is asking the Board of Transport Commissioners to increase its permissive level of earnings.

Here's the railway's case, as presented by President N. R. Crump to the Transport Commissioners:

By N. R. CRUMP,
President,
Canadian Pacific Railway Co.

As at Jan. 1, 1956 the net investment in Canadian rail property of Canadian Pacific, under the Uniform Classification of Accounts, after adjustment in accordance with the Board's judgment respecting donations and grants, was $1,347,635,000. It is estimated that in the calendar year 1956 this investment will earn $42,845,000, thus providing a return of only 3.18%.

This unsatisfactory return is a matter of grave concern to Canadian Pacific. While it is not possible now to determine what the net investment in rail property will be at the end of the present year, it is known that it will be substantially higher than as at Jan. 1, 1956.

On a constructive year basis — that is, if the revenues and expenses are restated so as to reflect for a full year changes that have or will become effective before the end of the year — the net rail income becomes $43,954,000, or a return of 3.26%. On the basis of the constructive year (restated) — that is, a further adjustment in expenses is made to reflect the known increases in wage levels to become effective next year — then the net is reduced to $39,664,000, or a return of 2.94%.

The figures given above reflect the interim increase effective from July. If net income is adjusted to reflect a 15% increase in lieu of the interim increase now in effect, net income on a constructive year basis would be $48,199,000 or a return of 3.58% on net rail investment as at Jan. 1, 1956. Similarly, on the basis of the constructive year (restated), net income would be $43,909,000 or a return of 3.26%.

The permissive level of income of the railway enterprise of Canadian Pacific has in recent years been arrived at on a requirements formula evolved in the 21% and 20% cases. Applying the elements of that basis to the situation as it exists in 1956 results in a total level of permissive earnings for rail estimated at $49,936,000, made up as follows:

Fixed charges	$14,167,000
Preference stock dividends	3,136,000
Dividends on ordinary stock	17,398,000
Surplus	15,235,000
Total	**49,936,000**

This permissive level of income related to the net investment as at Jan. 1, 1956, would provide a return of only 3.71%. Such a low return is patently wrong in light of the risks and requirements of Canadian Pacific.

This can be demonstrated by comparing it with the return on the practically risk-free bond issues of the Government of Canada. The most recent issue yields 3.90% to maturity in 1998. The yields on outstanding Victory Loans range from 3.73% to 3.89%, based on market quotations as at Sept. 6, 1956. The only outstanding issue of Government of Canada bonds without special features which was quoted at par on Sept. 6, 1956, was the 3.75% issue due 1975-78.

The requirements basis as adopted by the Board in the 21% case and as subsequently adjusted in the judgment of Sept. 20, 1949, provided for permissive net railway income for 1947 of $49,347,702 (Judgment March 1, 1950, p. 7). This amount, related to the net investment in railway property as at Jan. 1, 1947, of $949,511,000, provides a return of 5.20%.

A Lower Return

Thus the permissive rail income determined by the requirements formula has resulted in a diminishing return on net rail investment. This is caused by the fact that from 1947 to 1956 the permissive rail income under the formula increased by only $588,298, while, in the same period, net rail property investment increased by $398,124,000.

Clearly such a result indicates the need for an increase in the permissive level of rail income. Whatever might be said of the level of permissive earnings as determined for 1947, they are clearly too low as related to present day money costs.

But considering only other changes that have taken place since that time, it is clear that a substantial upward adjustment in the permissive level is overdue. There are two major changes:

First is the change brought about by the Uniform Classification of Accounts, which transferred from non-rail to rail large segments of property, such as commercial communications and separately operated properties such as Canadian Pacific's share of Northern Alberta Railways. The amount involved is $55,554,533.

Important as this change has been, it is not nearly as significant as the investment made in railway property of amounts that would have been otherwise available for distribution to shareholders. In the years from Jan. 1, 1947, to Jan. 1, 1956, this amount was $214,905,103.

This amount of $214,905,103, so invested, is part of the shareholders' equity and is entitled to the same return as equity capital raised by the sale of ordinary shares. Other companies usually recognize this right of their shareholders by disbursing dividends on an increasing scale. In some cases the result is achieved through the splitting of common shares and an increase in the total dollar amount of dividends paid.

If the amount so invested in railway property of Canadian Pacific since 1947 were represented by ordinary share capital, the amount of ordinary stock outstanding would have increased by $214,905,103 or 8,596,204 shares, which may be contrasted to the 13,878,173 ordinary shares outstanding at the end of 1955. If this had been done, under the requirements formula the allowance for dividends on ordinary stock would have been increased by $10,745,255.

The shareholders are not being fairly treated unless the increased rail investment not covered by the issuance of ordinary stock receives recognition in the permissive level of rail income. Retained earnings belong to the shareholders and management can justify keeping them only by investing them profitably. Over any but the short term, management loses its justification for investing the shareholders' funds if such money is not permitted to earn a return.

Money To Grow On

Recognition in the permissive level of earnings invested in the property goes beyond the matter of equitable treatment of present shareholders even though this alone would be adequate justification for such recognition. There is also involved the question of raising more equity money in the future. This will certainly be influenced by whether or not existing equity money receives fair treatment.

The need for attracting substantial sums of additional equity capital to Canadian Pacific rail enterprise is very real and pressing. Over the next 15 years it is estimated that capital needs for Canadian Pacific rail property will amount to more than $1.3 billion.

It must be emphasized that substantial amounts of new capital will be required merely to replace existing property as it wears out. This is due to the very substantial increase in price levels during recent years and the fact that depreciation recovery is related only to original cost.

Moreover, expansion of Canadian Pacific rail facilities to keep pace with Canada's economic growth and development is needed, involving the raising of substantial sums of capital.

It is unlikely that much more than 60% of the $1.3 billion will become available from depreciation accruals and salvage proceeds. The balance must be obtained from other sources. Therefore Canadian Pacific must be in a position to secure substantial sums in equity funds.

To secure these equity funds Canadian Pacific must compete with other users of capital. Investors, in the exercise of their free choice, will assess the the attractiveness, stability and certainty of the investment opportunities open to them.

An illustration of the investment opportunities presently available in Canada is provided by an examination of earnings on equity as measured by the ratio of net profit after taxes to shareholders' equity. The last official figures from the Bank of Canada are for the year 1954.

These show that in that year 673 Canadian companies earned an average return on equity, after taxes of 11%. An analysis of the profit picture of 344 Canadian companies for the year 1955, published by The Financial Post on May 12, 1956, shows a weighted average return on equity, after taxes, of 11.10%.

In contrast, during 1954 Canadian Pacific earned 1.76% on shareholders' equity in its railway enterprise after adjustment for donations and grants, and during 1955, 2.88%.

Competing for Capital

Clearly Canadian Pacific is at a marked disadvantage in competing for capital based on its rail enterprise. This rail enterprise has the tremendous advantage of having associated with it the non-rail assets of Canadian Pacific. Even including non-rail income, the return on total shareholders' equity in Canadian Pacific in 1955 was only 4.78%.

The requirements formula has created a vicious circle. For Canadian Pacific to have attempted the sale of equity securities with an inadequate level of earnings would have seriously affected the price at which such securities could be sold and would have resulted in diluting the equity of the existing shareholders.

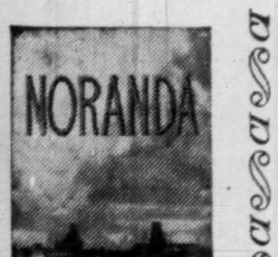
Canadian Pacific was thus required to follow a policy of investment of shareholders' earnings and the shareholder is presented with a difficult choice: either he must consent to a large proportion of his earnings being retained by the company for capital purposes without any assurance of an increase in his dividends or his existing investment in the railway may be imperilled through being unable to get adequate capital to carry on.

ANNOUNCEMENT

CANADIAN BANK OF COMMERCE DIRECTOR

ROBERT B. ANDERSON

The Canadian Bank of Commerce announces the election of Mr. Robert B. Anderson of New York, to its Board of Directors. Mr. Anderson is President of Ventures Limited, President of Falconbridge Nickel Mines Limited, and a Director of Crown Trust Company and a number of other corporations.



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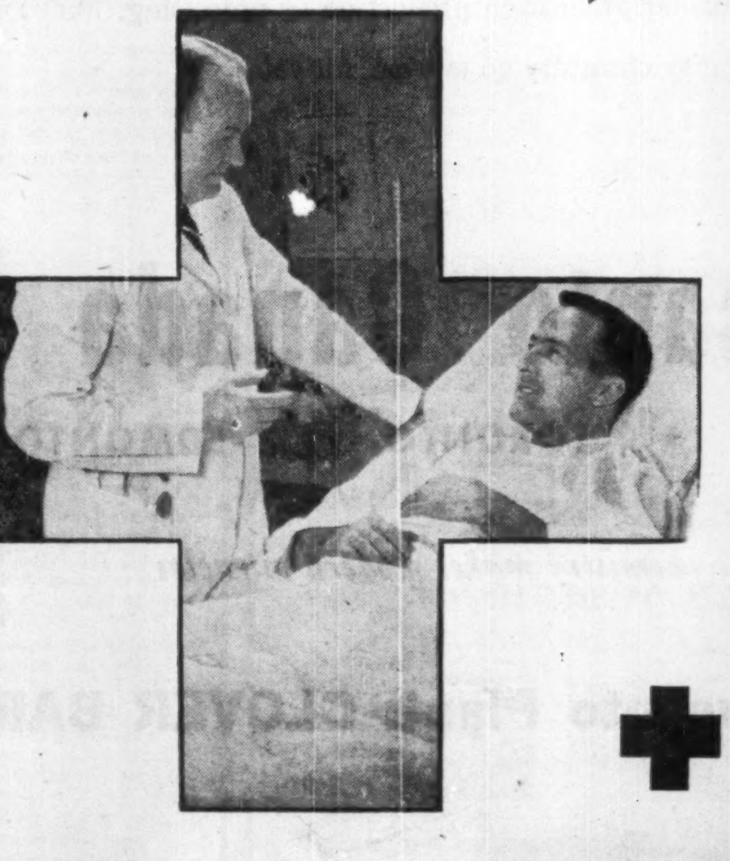
BASIC FACTS ABOUT BLUE CROSS



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R. G. Wilson, Executive Director

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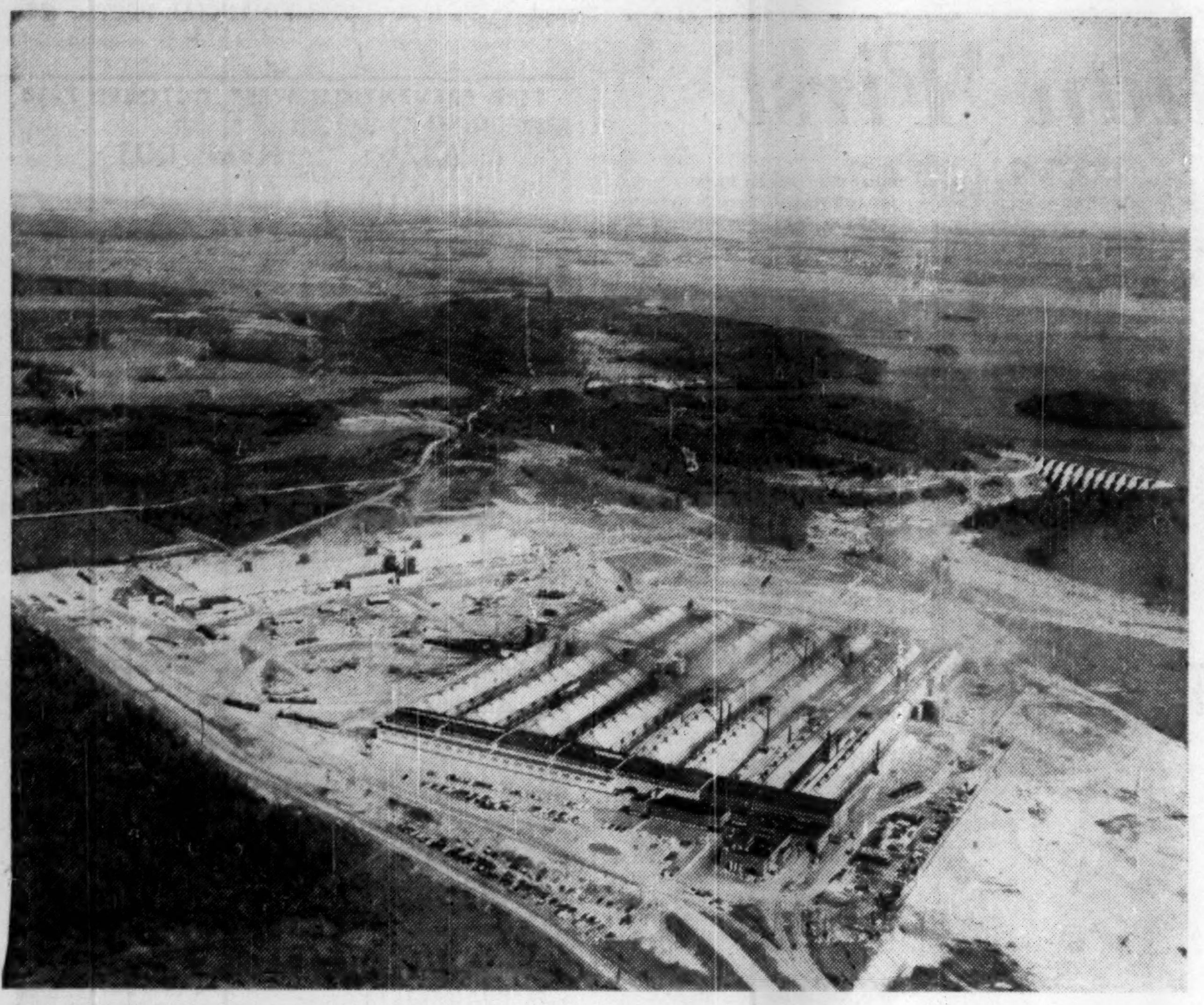
The Financial Post

Vol. L | Publication Office: Toronto, September 29, 1956 | No. 39



Expansion:

Aluminum Co. of Canada's plant at Isle Maligne, Que., this year was expanded to a 115,000-ton capacity (from 93,000 tons). Also in Quebec, work has started on Canadian British Aluminium Ltd.'s new Baie Comeau plant (80,000-ton capacity in 1958).

This is Crucial Round For Lightweight Champ

By ALLAN FENTON

With demand red hot for aluminum — the industry is skyrocketing along with multimillion expansion plans.

In the big parade to expand primary capacity in North America, established firms like Canada's **Aluminium Ltd.,** Aluminum Co. of America, Reynolds Metals Co., Kaiser Aluminum & Chemical Corp. are heading the march.

But a stream of newcomers like **Canadian British Aluminium Ltd.** in Canada and **Harvey Machine Co.** and **Olin Revere Metals Corp.** in the U. S. are rolling along with plans for new capacity.

It's big business in action and it's getting bigger. To Canadians it's important because the industry spells $75 million annually in wages, employment for 20,000, export sales topping $200 million and domestic sales of $56 million annually.

In 1955, U. S. production amounted to 1,560,000 tons or 51% of free world output of 2,852,000 tons. Canadian output of 608,000 tons represented 21% of total supply.

In Canada today, **Aluminum Co. of Canada**, a subsidiary of Aluminium Ltd., is the only producer and is scheduled to increase capacity by 59% to 1,032,000 tons by 1960 from 650,000 tons in 1955.

Canadian British Aluminium Ltd. is scheduled to be operating at 80,000 tons annually in late 1958 at its new $150 million plant at Baie Comeau, Que. This indicates total capacity installed in Canada will be 1,112,000 tons by 1960 or 71% higher than in 1955.

U. S. Capacity Grows

In the U. S. installed capacity is slated to chalk up an approximate 40% increase to 2,431,500 tons by 1960 compared with 1955 capacity of 1,737,000 tons.

In Free Europe, Africa and Asia production last year was estimated at 570,000 tons. By 1960, capacity is scheduled to be 1,112,000 tons or a 95% increase from last year's productive level.

The combined production of Canada, U. S., Free Europe, Africa and Asia last year reached some 2.8 million tons and on basis of plans installed capacity will be about 4,650,000 tons or more than 60% higher in 1960. That means an annual increase of about 10%.

So, there's a sharp rise ahead in the production curve. On the consumption side, growth trends are more difficult to measure.

During the past 55 years the historic growth rate has been a 10.75% average annual increase in the free world, equivalent to doubling every seven years. Present expansion plans indicate the free world will keep pace with this demand if it continues over the next five years.

But can it continue at such a pace?

The Paley report predicted U. S. demand for aluminum would increase between four and five times in the period between 1950 to 1975 and gave an estimate of 4.5 million tons for the latter year.

This estimate indicates a growth of 6.2% yearly but the commission stated demand in 1975 might be 100% greater than its estimates. In the past five years since the report, U. S. growth has been over 12% annually compared with the estimate of 6.2%.

A British Government "White Paper" in 1952 estimated the U. K. would require about three times as much aluminum by 1975 as was consumed in 1951 when consumption was about 295,000 tons. This is a growth rate of approximately 5% per annum.

Production in the free world last year went to a new peak of 2,845,000 tons, an increase of 7.5% over 1954 while consumption soared to a new top of 2.7 million tons, a 26% boost.

The 1955 figure is distorted perhaps because of 1954's general business recession. As a result there was stockpiling and consumption was down.

In the free world there are about 25 separate aluminum producing companies operating in some 16 countries. In order of importance the major producing countries last year were the U. S., Canada, West Germany, France, Norway, Austria, Italy, Japan and Britain.

Canada's Aluminium Ltd. has interests in five of the overseas smelting companies, but these are mainly small producers. Canadian aluminum exports must compete with metal made by all the other major world producers.

To Canada, a most significant feature of these competitors is that their production is substantially all required for consumption at home. Canada makes up the deficit where local production is insufficient or non-existent. At least 75% of all output that moves in international trade is Canadian.

In major markets served by Canadian metal, consumption is growing. With growth in world population, continuing rise in living standards and in per capita consumption in industrial countries, and emergence of new industrialization and higher living standards in "backward countries," the future looks bright.

The importance of this growth can be seen in the figures for capital outlays by Aluminium Ltd. and consolidated subsidiaries, chiefly in Canada or to support Canadian operations: 1940-50 inclusive, $342 million; 1951-54, $483 million; 1955, $71 million; 1956-59 projected, $500 million; or $1,396 million from 1940-59 inclusive.

This means the company is pouring in more than $1 million per week on capital account over the 20 years, and averaging more than $2 million per week for the five past years.

Despite this shot in the arm, it doesn't look as though much easing in the supply squeeze is in sight right away.

In 1956-57, for example, the U. K. has first call on 275,600 tons per annum. In the U. S. contract commitments call for delivery of some 577,900 tons to Alcoa and Kaiser in 1956-58 period.

In addition, a further 110,000 annually from 1955 to 1959 is reserved for non-integrated U. S. fabricators.

Dividing deliveries to Kaiser-Alcoa equally over the three years, it would mean major contracts call for 578,233 tons of production this year. Installed capacity is only 650,000 tons (excluding 30,000 tons due at Kitimat, B.C. in December).

How Tight the Supply?

Drought conditions caused production cutbacks earlier in the year in Quebec. With 80,000 to 100,000 tons needed by Canadian fabricators, it's quite apparent just how tight supply is. That's one of the reasons Alcan had to ration shipments earlier this year.

The U. K. contracts are options to purchase only, however. The U. K. doesn't have to take the metal if it doesn't want it, so the size of this demand is by nature a guessing game.

In 1957, contracts in the U. K. and U. S. may result in allocations of a further 578,233 tons of output but capacity will increase in the year by 62,000 tons to 732,000 tons. That may provide a little leeway, certainly not much, with other markets growing.

It also seems reasonable to assume that with tight supply this year Alcan would reduce shipments to the U. S. producers, make up the deliveries next year under terms of the contract. As a result, the supply situation this year mightn't be quite as tight as indicated but the pressure would still be on in '57.

In 1958, a new U. K. contract extending to 1960 might take 303,900 tons per year, if options are taken up. Estimating Alcoa-Kaiser contract metal at 192,000 tons (it could be higher or higher depending on how much is filled earlier) and 110,000 to U. S. independent fabricators, 605,900 tons of Alcan tonnage is earmarked for these sources alone. Capacity at Dec. 31, 1957 will be 792,000 tons—still a tight squeeze.

While present contract commitments to the U. S. will be sharply reduced through expiration of the Alcoa and Kaiser contracts at the end of 1958, even if they aren't renewed, there should still be plenty of demand for Canadian ingot in that country. If not, the world's a big and growing oyster.

In West Germany, for example, reports abroad indicate aluminum interests there are chiefly concerned at present with arrangements for stepped up imports over the next few years. That's because investments in new capacity are said to offer fairly small profit margin due to high interest rates on loans and absence of low-cost electricity.

Market Potential Good

But the market potential is good. Domestic demand last year jumped to 284,000 metric tons, 25% higher than 229,000 in 1954. Imports doubled in the same period and reportedly will likely reach four times last year's volume and will amount to an estimated 80,000 tons in 1960 vs 21,000 tons in 1954.

Canadian shipments to West Germany reportedly will increase to 50,000 tons annually by 1960 from about 8,000 tons in 1955. There appear to be plenty of opportunities too in other areas of Europe, the U. K., in Latin America—all willing buyers postwar.

On the basis of announced plans Alcan will have the largest amount of installed capacity in the world by the end of 1959.

But U. S. producers are making big gains too (see separate table).

Alcoa, Reynolds and Kaiser account for 96% of U. S. output and **Anaconda Aluminum Co.** (60,000 tons, no announced plans to expand) account for the remainder.

Two other companies, Harvey Machine and Olin Revere have plans to build plants which would add a further 247,000 tons to U. S. capacity by the end of 1959.

The six primary producers in the U. S. would then have a capacity of roughly 2.5 million tons at the end of 1959 compared with 1,737,000 tons at July 1, 1956.

It doesn't look excessive on the basis of increased consumer and industrial use. And the U. S. likely will retain its present share of Alcan output.

The fast-paced growth in demand has been a result of its versatile and good qualities; the growing familiarity and experience in its use; aggressive sales development policies, and the many contributions in research.

Continuing high prices for copper and rising steel prices are keeping the door open for aluminum even though its price has moved higher.

There may be temporary periods of oversupply, but with a number of existing users—such as automobiles, railways, canning—waiting for an adequate supply, it looks as though surpluses should be absorbed quickly. (Not even the growing aluminum industry, of course, is insulated from a major world recession, if it occurs.)

Plans Projected Far

And beyond today and the next few years is a tomorrow in which plans are projected to further boost capacity.

In northern B.C. at Kitimat the increase to 330,000 tons will gradually advance to 550,000 tons. While no target date has been set for the program, Alcan indicates the potential could be reached with relatively good speed.

A second 10-mile tunnel would have to be drilled through the coastal mountains to harness more power and bring this resource to 2,400,000 hp installed capacity, one of the largest developments in the world.

At Baie Comeau, Que., if and when CBA gives the go-ahead to a further round of expansion, an additional 80,000 tons of new capacity will be installed raising total installed capacity there to 160,000 tons.

It is difficult to believe Canada's total capacity was only 90,000 tons in 1939. It's equally difficult to see how Canada can lose out in the race to supply growing markets if she continues to show the same drive as in the past.

Our aluminum capacity is soaring . . .

Aluminum Capacity Growth

Canada	1955	July 1/56	Dec. 31/57	Dec. 31/58	Dec. 31/59
	tons				
Aluminum Co. of Canada					
Arvida	362,000	362,000	362,000	362,000	362,000
Isle Maligne	93,000	115,000	115,000	115,000	115,000
Shawinigan Falls	68,000	68,000	68,000	68,000	68,000
Beauharnois	37,000	37,000	37,000	37,000	37,000
Kitimat	90,000	150,000	210,000	270,000	330,000
Total	650,000	732,000	792,000	852,000	912,000

N.B. These estimates don't include an additional 120,000 tons to be available through Peribonka development in Quebec where power will come in within three years. This would bring Alcan installed capacity to 1,032,000 tons before 1960.

Cdn. British Aluminium .... 80,000 tons

Total Canadian capacity in 1960=1,112,000 tons.

Along with the U. S. industry . . .

Aluminum Capacity Growth (tons)

U.S.	July 1, 1956	Dec. 31/57	Dec. 31/58	Dec. 31/59	
Alcoa	792,500	817,400	912,400	962,500	
Reynolds	450,000	489,500	559,500	575,000	
Kaiser	434,500	434,500	538,200	587,000	(682,000 planned)
Anaconda	60,000	60,000	60,000	60,000	
Harvey	.....	20,000	67,000	67,000	
Olin Revere	.....	......	60,000	180,000	
Total	1,737,000	1,821,400	2,197,100	2,431,500	

And the rest of the world . . .

	Production 1955	Capacity Indicated 1960
	tons	
Canada	608,000	1,112,000
U. S.	1,566,000	2,431,500
Free Europe	592,000	880,000
Africa	......	50,000
Latin America	3,000	50,000
Asia & Pacific	76,000	132,000
	2,845,000	4,655,500

Keeping us in pace with the pattern.

Production of Primary Aluminum (tons)

	*World	Canada	Cdn. Output as % of World
1905	15,400	1,200	8%
1915	85,800	9,200	10%
1925	201,300	15,600	7.5%
1935	256,300	23,100	9%
1940	789,800	108,900	14%
1945	862,400	215,600	25%
1950	1,421,200	396,000	28%
1951	1,723,700	446,600	26%
1952	1,951,400	499,800	26%
1953	2,351,200	545,800	23%
1954	2,646,400	560,900	21%
1955	2,852,000	608,300	21%

*Excludes Russia and satellites

Free world demand will remain high . . .

Aluminum Consumption in Free World

—In past 55 years, the historic growth rate has been a 10.75% average annual increase throughout the free world, or a doubling of consumption every seven years.

—Authorities don't believe demand will continue at this fast clip to 1980.

—But it's going to go up. When will it level off? Primary consumption jumped 24% in 1955 over 1954.

Though our market pattern may shift.

Where Canada's Output Goes to Market

	1950	1951	1952	1953	1954	1955
			tons			
U. K.	146,300	199,750	257,750	184,600	221,800	267,100
U. S.	162,250	103,100	114,500	237,000	192,560	192,100
Canada	66,000	86,350	88,550	90,200	80,000	85,000
All others	41,600	53,800	39,150	37,900	60,840	65,400
Total	416,150	443,000	499,950	549,700	555,200	609,600

Aluminum's industrial uses are varied . . .

Where Alcan's Output Goes in Industry*

Building & Construction	10%
Transportation	28%
Household & Commercial Supplies	15%
Electrical Industry	14%
Canning & Packaging	8%
Other Miscellaneous Industries	23%

*Based on 1955 analysis of 13 principal markets outside U. S. served by Alcan.

And domestic demands will increase.

Demand for Aluminum in All Forms

Canada	Today*	1960*
Building & Construction	28,000	42,500
Transportation	15,000	29,200
Household & Commercial Supplies	6,000	12,200
Electrical Industry	25,000	34,000
Food & Farming	2,000	3,300
Canning & Packaging	5,000	11,600
Other Industries	12,000	12,400
	93,000	145,200

*Estimated

Loss by Fire: A Canadian 'First'

Canadians are justifiably proud of a long list of Canadian "firsts" — we produce the most nickel, we have the longest railways, we even make the most telephone calls.

But there's one grim first no Canadian is proud of: our fire losses.

Property loss through fire is heavier, per capita, in Canada than anywhere else in the world.

Not only is our record the worst — it's getting worse. Last year, the value of property burned out in fires was 12¼% greater than the year before.

The reasons?

—This is a cold country. Furnaces are in use six months a year in the more temperate parts of Canada, longer in the northern areas.

—This is a vast country. With a small population there isn't always a fire department waiting just around the corner whenever a fire breaks out.

—This is a wooded country. Each year, fire takes an enormous toll of Canada's forests. Last year, loss through forest fires was nearly $7.5 million, an increase of $5.5 million over 1954. Older houses of wooden construction, too, are sometimes prey to Canadians' carelessness with fire.

Preventing fires is the lifework of specialists in Ottawa, in every provincial capital, and in other major cities throughout Canada. The undoubted success of their work can never be measured in figures — who can say how many fires have been prevented?

One of their biggest undertakings, a never-ending one, is the education of adults and children to the dangers of fire, the ways to prevent fire, the means of coping with fire.

Through newspapers, magazines, radio, television, motion pictures, after-dinner speeches, and every other means of communication, fire marshals in 10 provinces are trying to impress upon the public the extent of the appalling loss that occurs from fire annually, and the specific ways of keeping these fire losses from expanding at the same rapid rate as new buildings are being put up and the population increased.

Another major project of the fire marshals, fire chiefs and their staffs is the standardization of municipal fire regulations. Unfortunately, many property owners will only take precautions against fires destroying their property when the law requires them to do so—and when fire inspectors are present to enforce the law.

But all too often municipal fire regulations are a patchwork of good intentions and bad results.

This year, something is being done to give all Canadians — wherever they live — an equal chance against the scourge of fire.

Two meetings have already been held of the newly formed associate committee on national fire regulations. The committee is studying a model bylaw, drafted by the Ontario Fire Marshal's Office, which may become the standard legislation on fire protection for all large, paid fire departments. (A similar model bylaw has already been enacted by nearly 400 municipalities which have volunteer fire departments).

The committee, under the chairmanship of Deputy Fire Marshal Martin Hurst of Ontario, has members from across Canada representing the National Research Council (its sponsors), municipalities, provincial fire marshals, municipal fire chiefs, fire insurance organizations and others.

The model bylaw to be approved by this committee will, it is hoped, be a model to govern the whole field of fire department organization and authorities; it will be comparable, in its function, to the National Building code, a model building bylaw.

A Constant Check

Closely linked to the drafting of municipal legislation is the enforcement of the same legislation, through constant inspection and — where necessary — prosecution.

Local fire departments must inspect and re-inspect buildings within their municipalities with an unfailing vigilance, to ensure that high standards of fire safety are being observed.

In Ontario, for instance, the work of local fire authorities is supplemented by the provincial fire commissioner. His staff provides the advice and technical assistance of trained engineers to any responsible municipal official or council.

Another function of the provincial fire engineering division is the examination of plans for institutional-type buildings to ensure adequate fire safety measures and exit facilities. Architects and municipal officials are finding that it is wiser to provide for these in the original construction rather than when ordered to do so later by the Fire Marshal using his statutory authority.

Fire Killed 572 Canadians

	Fires	Deaths	Property Loss
Alberta	2,422	46	$6,810,883
British Columbia	7,643	65	10,889,620
Manitoba	2,417	36	4,330,540
New Brunswick	2,250	23	3,127,983
Newfoundland	1,059	19	538,702
Nova Scotia	1,816	31	2,495,579
Ontario	23,213	198	29,607,786
Prince Edward Island	372	6	878,124
Quebec	32,778	118	38,060,125
Saskatchewan	2,000	30	5,902,422
TOTAL	75,970	572	102,641,764
Forest fires	6,516	...	7,447,848

This authority has teeth in it, as some property owners have had time to reflect upon in jail. Of the 200,000 individual inspections by local fire departments in Ontario each year, less than 1,000 result in formal written orders from the fire inspectors, and only about 50 appeals against these orders are made each year.

But when an order is ignored, the force of the law is brought to bear against the offender. A Toronto man this year paid a fine of $10 a day for each of the 54 days he had disregarded the Fire Marshal's order. Another man served 75 days in jail for refusing to obey an order issued by the Peterborough fire department under provisions of the Fire Marshals Act.

School for Firemen

The training of firefighters has become a highly developed specialty in many parts of Canada. Ontario's fire training is under the direction of a university graduate holding a teacher's certificate. Field instructors are all experienced men with training at the best fire schools in the U.S. and U.K.

The regular yearly program includes practical training, the handling of the most modern fire-fighting apparatus and equipment, and fighting fires at the five-day regional fire schools; development of trained instructors at the 60-hour county fire instructors' courses; a three-day conference on senior administrative responsibilities held annually at University of Toronto for fire chiefs; fire inspection practices courses; and a variety of other technical courses.

Between 500 and 600 fire department officers and men are trained annually in these courses, and another 1,000 firefighters are given instruction and training by field instructors from the Fire Marshal's office.

This year, to help cut the mounting toll from electrical fires, Ontario's Fire Marshal introduced two-day electrical inspection courses. These were held in 16 cities throughout the province, and were attended by 800 firemen.

Education in fire-fighting, as in other fields, is a never-ending process. Each year, new dangers come to the fore, new prevention methods must be disseminated.

This year, special attention is being given to the dangers of fumes from fires in warehouses containing agricultural chemicals. There have been cases in which firefighters have been temporarily paralyzed by fumes from the phosphorous compounds which are used in such agricultural preparations, and which inhibits the nerve functions.

Growing use of magnesium — in machine parts, for instance — has given rise to the remote but nevertheless real danger of fire in magnesium dust. If the fine pieces of dust are dampened by a vegetable oil, or if any other source of ignition is present, there is a fire hazard.

Underwriters Labs Fight Fire By Exacting Scientific Tests

By D. R. ABBEY
Standards Engineer,
Underwriters' Laboratories
of Canada, Toronto

Grim stories of tragic fires hit the headlines last year — especially in Ontario where last winter's fires were killing children at the rate of one a day.

But quiet progress is being made in the fight to curb this menace.

Headquarters for a great deal of fire-prevention work is the Underwriters' Laboratories of Canada, housed in a modern 10,000-sq.-ft. single-story building in Scarborough Township just outside Toronto.

Here everything from switch buttons to fire trucks are put through its exacting tests. Once the appliance has met these requirements it receives the universally accepted ULC label or listing.

ULC is a non-profit organization sponsored by the Dominion Board of Insurance Underwriters and chartered by the Government of Canada. Its laboratories and inspection service examine appliances, devices and materials for their life, fire and casualty hazards, and also crime prevention.

Although incorporated in August 1920 ULC's work was largely carried on by Underwriters' Laboratories, Inc., Chicago, until December 1949. Then an important group of Canadian insurance companies, through the Dominion Board of Insurance Underwriters, assumed full and direct sponsorship which enabled it to become a separate Canadian entity.

With the changed status, steps were taken to staff and equip a testing station in Toronto. This staff now numbers abou 30 persons.

In September 1954 ULC moved from downtown Toronto to a new $150,000 building in Scarborough. The dominant feature of this L-shaped structure is a tower room—45 ft. high and 20 ft. square—designed for such experiments as the standard 30-ft. drop on fire-resistant safes.

Plans call for extensions to a floor area ranging from 50,000 to 80,000 sq. ft. as required.

$15,000 Furnace

A major addition to the laboratories' facilities has been the $15,000 fire hazard classification furnace, whose official start-up was witnessed early this year by nearly 100 representatives of insurance, government and industry.

The tunnel furnace, as it is called, provides a means of determining the relative hazard of materials used in building construction. This furnace is identical to that designed and used for over 20 years by Underwriters' Laboratories, Inc. It may be used for testing in accordance with the standards of the National Fire Protection Association International and the American Society for Testing Materials.

Materials are tested in the furnace under standard conditions and classified according to the rate of flame spread along their surface, the amount of fuel the materials contribute to a fire, and the amount of smoke produced.

By means of a removable top a sample of the material is made to act as the ceiling of the tunnel over 20 ft. long. This sample is attacked by a 4½-ft. flame for 10 minutes and the results recorded.

Other new equipment installed includes:

—generators for both 25-cycle and direct current;

—water pump capable of delivering 500 gals. per minute at 150 lb. pressure used for tests on fire service equipment;

—specially designed structure for tests on prefabricated flues for all types of heating equipment.

The diverse testing operations of ULC call for ingenuity in the field of temporary equipment to perform special tests. An example of this type of problem is cooling a half-ton fire extinguisher to 65 deg. below zero, to test its ability to operate under Arctic conditions.

For this test a temporary box was constructed, insulated with sawdust, and cooled with blocks of dry ice which is solid carbon dioxide 110 deg below zero. Uniform temperatures were obtained by a circulating fan and temperatures were measured by electrical means as well as by special low-temperature thermometers.

The equipment worked well and frost covered extinguisher when the sun was shining and the thermometer registered 80 in the shade.

The steady growth of ULC is reflected in the new classes of products which have been investigated and, where acceptable, included in its listings. These range from asbestos fibres to tractors. They include local burglar alarm units, both conventional style and those using ultrasonic waves too high for the human ear to hear; wallboard and other building materials; accessories for use of liquefied gases; hose stream nozzles and special firefighting foams—in all about a dozen new classifications.

Before ULC can extend listing to a device the requirements must be determined. Wherever possible these are published in the form of a standard, reflecting the requirements of the inspection authorities, the recommendations of such groups as the National Fire Prevention Association International, and the advice of the industry concerned and any others interested.

During the past 12 months revised standards have been prepared for inside tanks for oil burners, the type found in the basement of most homes equipped with oil burners. New standards have been published for the fire-hazard classification of building materials, carbon dioxide hand fire extinguishers and burglar alarm systems.

Further work is proceeding on other standards to keep these vital requirements up to date. This is all part of the steady growth and progress of ULC. "A corporation, not for profit," organized to help safeguard the Canadian people from fire accidents and crime.

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STOP FIRE
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This is Fire Prevention Week . . . a time to consider the terrible toll in life and property taken each year by fire. Whenever you read a story of fire's destruction in your newspaper, remember it could have been your home or business. Whenever you hear a fire engine's wailing siren, remember that the blaze could be endangering your family.

Follow these SAFETY RULES. They may save your life!

1. Put lighted cigarettes OUT completely.
2. Keep matches away from children.
3. Do not use gasoline for cleaning purposes.
4. Make sure electric wiring and appliances are safe.
5. Clean, repair and insulate your furnace, stove and chimneys.

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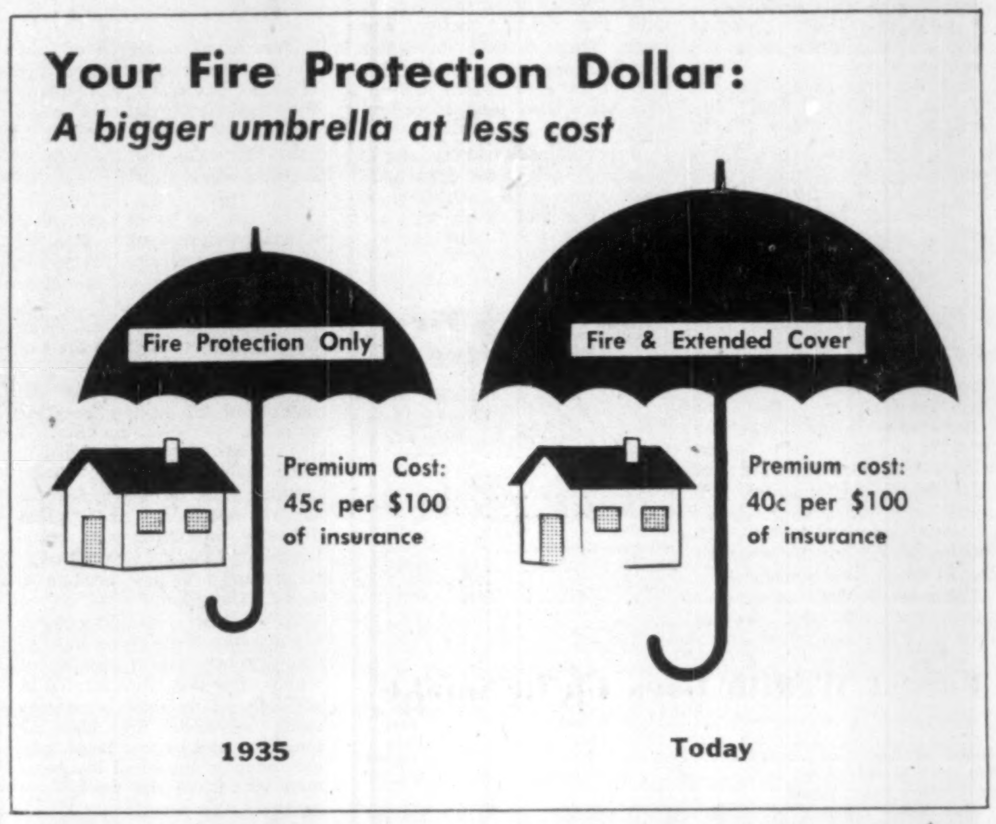
Yes, You Can Lower Premiums: Throw Out Those Fire Hazards



There's only one really effective way of cutting fire premiums—keep losses to a minimum by eliminating fire hazards. Lower losses throughout the country in homes, in the office and in the plant spell lower rates for everyone.

But can the individual homeowner or employer cut his own fire insurance premium?

It's possible in the office and in the factory, but there's a different story when it comes to the individual householder.

It's almost as difficult for the houseowner to take a dollar off his insurance premium as it is to add a cubit to his stature by taking thought.

Fire insurance premiums on houses are set by "flat rating." There is no inspection of a house and no setting of a particular rate for that particular building. Standard charges for various types of houses in different categories of areas determine the premium.

This system means two things: lower premiums since there is no house-by-house investigation cost; and, the individual houseowner who takes precautions can't achieve a lower rate for himself.

But, the insurance men point out, if everyone cut down on carelessness and eliminated fire hazards, the premium rate on all houses could be dropped below today's level.

Lightning or exposure to other fires, say insurance men, cause some fires. But there are lots of hazards within the average home that could be eliminated. Behind many of today's fires, they point out, is human carelessness about: smoking, overloading electrical wiring; overheating chimneys; storing inflammables; leaving hot coals, grease, wax, ashes exposed. Eliminate these hazards, cut fires and you can reduce prevailing fire insurance premiums, they state.

In offices it is possible for an individual employer to lower his premium payments by better fire prevention measures. There is some flat rating of office buildings, but most offices have premium rates established through investigation of premises. This leaves leeway to work toward lower rates.

The premium-paying employer should ask himself these questions: Would restricted smoking areas affect rates? Are heating arrangements as safe as possible? Are furnaces in separate rooms or in a corner of the basement? What about basement hazards such as cleaning fluid storage and woodwork repair shops? Could wiring and lighting be made less hazardous?

If the office building has several tenants, fire doors between establishments may effect economies in premium rates. In the case of older buildings, improvement in construction might be worth the cost through lower premiums. Sprinklers are an avenue to lower rates, say insurance men, although not usually needed in the so-called "fire-resistant" buildings built of concrete and steel.

Management has its best chance to save on premiums in the factory. Here individual building investigation is usually the rule and the tight jacket of flat rating doesn't apply.

Big problem: To arrive at a balance between what are the most effective methods of preventing a fire, keeping premium rates under control and at the same time keeping production lines running in the most economic fashion.

For example, to obtain lowest possible insurance rates a production line handling inflammable materials should perhaps be broken into 10 steps each in a separate room. It's obvious that this could mean losses in production efficiency outweighing gains from lower premiums.

Take a Hard Look

Most effective assistance in lowering premium rates comes usually from the advice of fire prevention engineers. Canadian Underwriters Association has a squad available to work on behalf of the Dominion Board companies. And most independent companies and mutuals also make the services of such fire prevention specialists available to insurers.

By and large, the advice of these engineers is highly practical. Fully aware of all fire prevention techniques, these specialists are also familiar with the problems involved in producing, handling, storing industrial materials.

Fire prevention week, say insurance men, is a good time for premium-paying management to step back and take a long, hard look at existing fire prevention practices. What is needed, what is possible and what is practical will of course vary from plant to plant.

What would sprinklers mean for prevention and premium cuts? Are standards of housekeeping slipping? Should smoking be restricted to marked areas? Are volatile materials being handled as carefully as possible? Should these be stored in separate buildings? What about raising production line materials onto skids to avoid water damage in case of fire?

These are only some of the questions plant management can ask itself—and ask of fire prevention engineers, say insurance men. Out of answers to some of these may come bigger savings in premium rates.

These Dangers Haunt Electricity's Domain

To adapt a time-worn adage to another field, it can be said with equal truth that "Electricity is a good servant but a bad master."

Electricity causes 10% of all fires in Canada—13% of all property loss—largest total due to any known single cause.

Over the last five years for which figures are available, electrically caused fires destroyed property worth $55 million in Canada.

As with all fires, a small part of the losses may have been unpreventable. But the greater proportion were caused by human failure to take proper precautions. They need not have occurred.

With the increasing use of electricity in industrial and domestic life, fire prevention experts in recent years have been emphasizing the attendant hazards and pointing out what can be done to minimize them.

Ontario recently amended the provincial Fire Marshals Act to give the fire marshal and his representatives more authority regarding inspections.

Chief causes of electrical fires noted at different times by experts have included:

Inadequate wiring.
Faulty or make-shift wiring.
Overloading of circuits.
Use of fuses too big to protect the circuit.

These hazards are likely to be greater in old buildings than in new ones.

Two Common Hazards

A recent report issued by W. J. Scott, Fire Marshal for Ontario, says:

Two of the most common hazards found in homes today are over-fusing and the improper use of lamp cord for permanent wiring by the "do it yourself" owner or occupant. Wiring, which may have been quite adequate for a one-family dwelling 25 years ago, can now be totally inadequate, when one realizes that the number of electrical appliances available to the householder for home use has increased, within the past 25 years, from some 18 appliances to over 100 at the present time. In addition the wattage for individual appliances has been greatly increased. Further hazards have been introduced by the use of large older type homes for multiple occupancy. In these cases an electrical installation, which normally served one family, may now be required to serve several, often resulting in a situation where oversize fuses are used to carry the load and a fire hazard is created."

The most commonly quoted example of overfusing is putting a copper in the place where a fuse should be. This allows the wires to carry more current than they are designed for and overheating occurs which may burn out the insulation and ultimately cause a fire. The same result may come from using a 30 ampere fuse on a wire circuit designed for a 15 ampere fuse.

Points to Watch

In an address to fire inspectors, Roland L. DeMers, chairman of the Public Safety and Protection Committee of the Electrical Contractors Association of Ontario, commented on a few major hazards this way:

Always suspect the home with a 30 amp. two wire service. I have examined scores of these homes in both Toronto and Windsor over the past months and years. In many cases, the service conductors are only of No. 12 gauge, which gives the house a total entrance capacity of only 20 amps. It is true that these homes do not have full size electric ranges. But, all too often, they have two rangettes, a normal complement of lights and trilites, one or more refrigerators, perhaps an oil burner, as well as numerous portable appliances. When many of these older homes were wired, there was no deed for baseboard outlets. There was nothing to plug into them. And so none were provided. Down the years, outlets in the baseboard were found necessary and in many cases they were wired in an amateur way.

We find, in a high percentage of cases, that these outlets are hooked onto existing knob-and-tube wiring in a lamp cord or bell wire—both of which conductors have a rated capacity far below standard No. 14 building wire—which—as you know—is rated at 15 amps. Often these receptacles were wired in without boxes to contain them. Almost invariably, too, these lamp cord outlets are tied on to existing wiring improperly and in such a manner as to create a fire hazard.

Lighting fixtures in older homes are always well worth investigating. Inspection often reveals that there is no box to contain the wiring and that heat from the fixture has partially or completely destroyed the insulation of the wire behind it. I have seen numerous examples of small electrical fires—which were never reported to the Fire Department — in old ceiling fixtures. They could have been big fires.

Another very common hazard is to find centre lighting wired in on the surface in lamp or extension cord—often from a wall bracket or a baseboard outlet. In these cases, the exterior cord has often been nailed up with tacks through the cord!

Overloaded Circuits

Circuits are overloaded and insulation on them is deteriorating. A good indication of an overloaded circuit is an oversize fuse which the home owner has put in because a 15 amp fuse will not hold the load.

Extension cords from too few outlets very often fray and bare the wire. And multiple plugs in one outlet overload the circuits.

You will find many additions to wiring which have been made by amateurs. Almost everybody today thinks he is an electrician, and so these amateur installations commonly lack fittings, strapping, and proper insulation —and, of course, Hydro inspection.

You will all too frequently find rangettes and other heavy load appliances plugged in on already overloaded circuits. And most of the older homes lack properly grounded circuits for washers and other appliances in basement and kitchen areas. There are almost never sufficient outlets for such relatively heavy-load (but portable) appliances such as toasters, irons, and broilers. Often you will find a recently purchased appliance such as a dryer, improperly installed.

Many homes include rented portions—with roomers—more than one—complete families, and so on. In these homes, electrical system was designed to serve one family's needs 20 or 30 years ago. Now that same electrical system is being asked to carry the load of two or more families today, when electrical use has vastly increased.

The Human Element

In the campaign to reduce or eliminate these hazards the human element is all important as in everything else.

No matter how efficiently a building is wired or how good the equipment is, if somebody uses say a 30 ampere fuse where a 15 ampere one is required he is likely to overload the circuit allowing it to carry more current than designed for causing insulation to burn out, etc. Or if a lamp cord is fastened to the wall by a nail or exposed to people walking over it on the floor it is liable to fray.

Dealing with the human element, Stanley G. Corke, assistant supervisor Label service, Underwriters' Laboratories of Canada stated the main elec-

(Continued on page 26)

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THE HIGH COST OF SMOKING

"FIRE CAUSED BY CARELESS SMOKER"—

A familiar line of type in today's papers. The careless smoker causes untold damage to property each year. Many people have become the innocent victims of a smoker's negligence.

Smoking around inflammable material, smoking in bed, a forgotten or carelessly dropped lighted cigarette is a potential fire starter.

Smoke with pleasure but be sure your cigarette is properly disposed of when you are through smoking. Tell others also if they are careless in their smoking habits.

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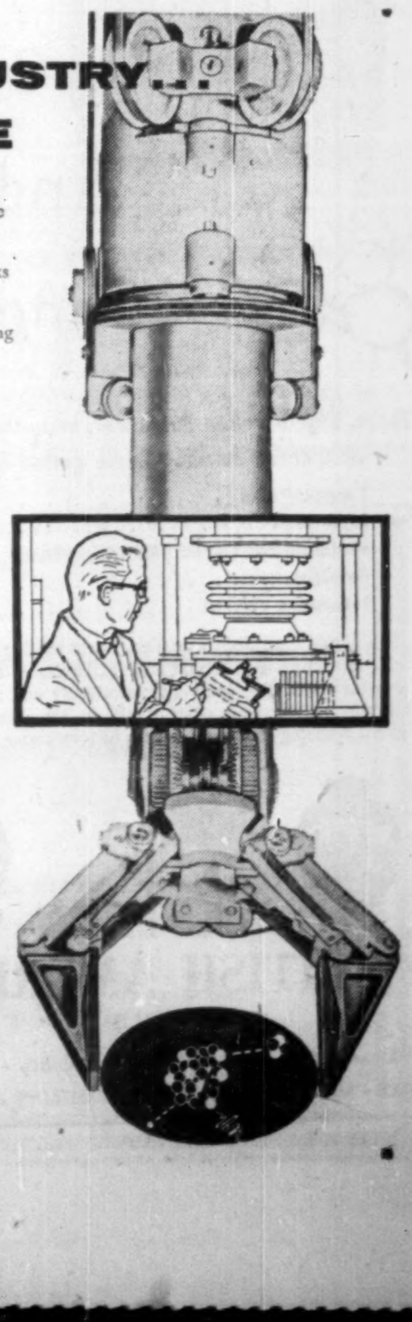

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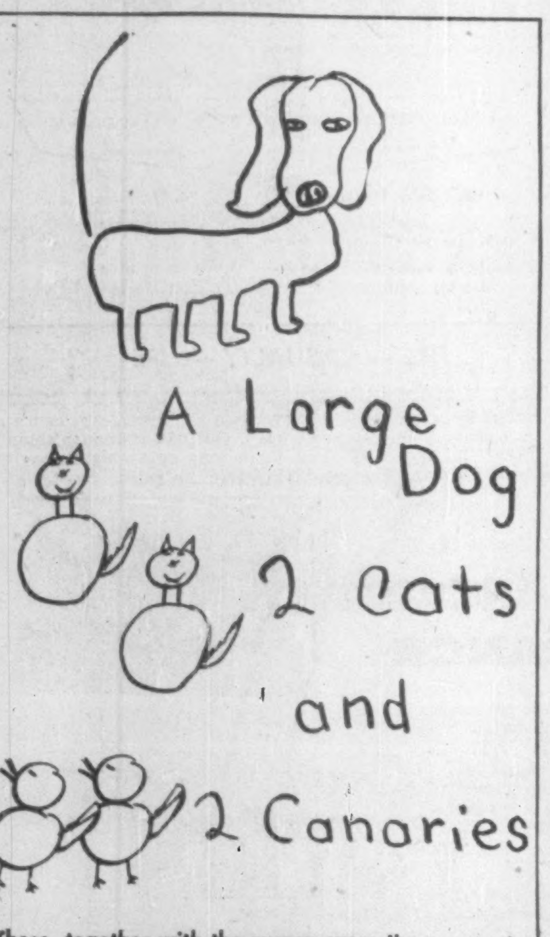

These, together with the owner, were the occupants of a small dwelling home gutted by fire.

Property loss	$6,000.00
Insurance carried	1,000.00
Premium for THREE years insurance	7.20
Furniture loss	2,000.00
Insurance carried	nil

This actual case from our files illustrates the ever-recurring consequence of UNDER-INSURANCE. Responsible owners check their coverage periodically and adjust it to current replacement costs. Only in this way can they avoid a tragedy such as the case history above.

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Forest Loss Tops Average

Canada's forest fire losses last year ran high above the annual average of the previous 10 years:

- Timber losses topped $7.1 million, over twice the average;
- Fire-fighting costs reached $6.5 million, three times the average.

But fire-prevention work is starting to have an effect, say forestry officials. There is still a long way to go before forest losses become reasonable but they see hope in these factors:

—Human carelessness is causing fewer fires than lightning, an uncontrollable cause.

—Total acreage losses are staying fairly steady.

—Average size of forest fires looks to be on the decline.

—Better fire-fighting equipment and methods are coming into use.

But there is no cause for pleasure in the record of losses. Millions of dollars worth of valuable timber lands are still going up in smoke every year. Campers and smokers are still starting about one third of all fires through carelessness.

There won't be a totaling of losses for 1956 for several months yet. But right now it looks as though 1956 losses will not be as heavy as those in 1955, though likely to be above the average of the past decade.

Helicopters were called more into fire fighting action this year. They carried on water bombing operations on a wider scale than ever before. Chemicals were also used more extensively.

A preliminary survey shows that well over 5,000 fires have been reported so far this year. About one half of all fires occurred in the B. C. forests.

How Forest Fires Are Started

	Annual av. 1945-54 %	Year 1955 %
Careless smokers	23	19
Camp fires	16	14
Settlers	10	10
Railways	11	9
Lightning	18	30
Industrial operations	5	5
Incendiary	3	2
Public works	1	1
Miscellaneous	9	6
Unknown	4	4

Forest Wealth Goes Up in Smoke

	Annual av. 1945-54	Year 1955
Number of fires	5,141	6,360
Total area burned (acres)	1,373,596	1,379,567
Merchantable timber burned		
Sawn timber (Mfbm)	382,041	238,141
Small material (cords)	1,054,139	2,321,077
Estimated loss ($)	3,655,718	7,140,960
Cost of fire-fighting ($)	2,059,827	6,570,944

Some 200 Children Will Die: Carelessness the Big Killer

This year 200 Canadian children will die by fire. The killer is carelessness.

Property worth some $100 million will go up in smoke. It's usually wanton waste through negligence.

"Canada's per capita fire loss record is one of the worst, if not the worst in the world," state the nation's fire marshals and chiefs.

Losses — in life and property — can be cut, say the marshals. In the week Oct. 7-13 the marshals and other organizations are scheduling an intensive program of public education to cut the loss in lives and property. Their theme: Don't give a fire a place to start.

Fire prevention week has been a regular occurrence for several years. Is progress being made?

The answer is yes — but there is still a long way to go before losses become even reasonable.

But losses are still too high. Fires in Canada over the last decade have cost 4,856 lives and injured 16,000 persons. In all there were 623,223 fires. Their price: $800 million.

This cost is higher in per capita terms than anywhere else in the world. Canada's per capita fire loss record compares with other countries this way:

Canada	$5.86
U. S. A.	4.56
Norway	2.44
Denmark	2.34
Switzerland	1.70
France	1.06
West Germany	.84
Australia	.70
Netherlands	.69
Italy	.32

That was the case in 1952 according to a U. N. committee. Since then in Canada per capita losses have climbed. Two years ago the per capita loss was $6.01. And last year the loss zoomed to be a record-high $7.60.

Fireproof Fluid Speeds Cleaning

Here is an example of how the development and use of fire resistant materials can upend the traditional patterns of a business.

In this case it's the use of chemicals in synthetic dry cleaning.

Until recent times the typical dry cleaning operation consisted of a large central plant which serviced a chain of collection outlets. It took a few days to move clothing to a plant, clean it there and return it to the collection outlet.

Main reason for this arrangement lay in the fact that petroleum dry cleaning entails a definite fire hazard. Expensive, often elaborate, fire prevention equipment is necessary. Since a small operator had great difficulty complying with regulations and paying heavy premiums, large chains became a practical solution.

Today there is a rapidly growing number of in-by-ten out-by-five dry cleaners, a number of whom offer one-hour service in addition. These are businesses using synthetic dry cleaning methods. And by and large they are independent small businessmen who have the work done on their own premises.

Responsible for this radical change in methods are several factors, chief of which is the non-inflammable quality of synthetic dry cleaning solvents such as Dow-Per (perchloroethylene).

Underwriters' Rates

Drastic drop in fire insurance premiums indicates how patterns are changing with synthetic solvents. Canadian underwriters' rates for cleaners using varsol, a petroleum solvent, are about 30c per $100; for petroleum solvents other than varsol premiums soar to 60c. A synthetic operation, by comparison, can buy insurance for a totally enclosed unit for 10c per $100.

As a result synthetic dry cleaning operations are becoming an attractive investment for the small businessman. Typical local establishment today calls for an investment in the region of $40,000. There are now in the region of 700 in Canada, and the number is growing by 20 to 30 per month.

Large dry cleaning plants are reported as slow in turning to the synthetic method. With a substantial investment in the petroleum-solvent method and distribution systems well organized, they see little reason to change — until the competition offered by faster service from the local operator begins to hurt.

Big cleaners are still continuing the petroleum method by about six to one. However, others are installing synthetic equipment in addition to regular facilities, to cope with rush orders. A few have closed their central plant in favor of installing individual synthetic units in a chain of branch offices.

C. L. Mort, manager of solvent sales at Dow Chemical which supplies the major share of the Canadian synthetic market, sums up the trend in the industry this way:

"There's no question that the major factor bringing a complete about-face in the dry cleaning industry was the elimination of a formidable fire hazard."

Strict laws, he points out, have until now governed the location of dry cleaning establishments. Now with non-inflammable solvents, fast service cleaners can move into vital commercial areas like today's shopping centre.

IF YOUR BUSINESS INSURANCE IS MORE THAN 10 YEARS OLD IT WILL NOT COVER HALF OF TODAY'S REPLACEMENT COSTS

Recently a well-known Toronto business firm was wiped out by fire. Three days later the directors of the firm were horrified to discover that the insurance coverage they thought was complete fell short of replacement costs by 40%!

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These Dangers Haunt Electricity's Domain

(Continued from page 25)

trical hazards were ignorance, neglect and misuse.

How does ignorance cause fires? Hazards are established by:

1. Expecting too much from an electrical system.
2. Unwittingly circumventing safety features.
3. Creating unsafe conditions through ignorance.

Every housewife makes sure that her pots are large enough before she starts boiling vegetables, that her chairs are strong enough to support the people who will be sitting in them, and that bannisters are steady and don't break when leaned on. She does this because she has seen pots boil over and chairs break. But she cannot see inside the walls and the boxes to determine the condition of the wiring systems.

Does the housewife know that the 15 amp. fuse is her watchman? Every housewife, in fact every individual, should be taught that the repeated burning out of fuses is a signal for repairs not bigger fuses. Fuses are the weak point when the amateur starts to get more capacity from his wiring system.

The second method of creating a hazard through ignorance is by unwittingly circumventing a safety feature. A very common possibility of such a condition today is when a wife buys her husband a new electric drill and it comes provided with a three-prong plug for the new Nema receptacle. But Joe's old house does not have such a receptacle and consequently he visits the local hardware store. He sees a cute little adapter which has three holes on one end to accept the three-prong plug attached to his drill cord and two prongs on the other end which will go into the receptacle installed in his basement. Of course, in his ignorance, he doesn't know what the little wire dangling out the side is for. He buys it, goes home and installs the adapter without grounding the little dangling wire which, of course, is the reason it is there. In his ignorance he has unwittingly circumvented a very important safety feature.

With respect to creating unsafe conditions, we have two prevalent diseases which are monkeyitis and do-it-yourself.

Do-it-yourself can mean kill yourself. This is not meant as a blanket indictment of do-it-yourself, but it is a commonly recognized fact that in certain forms of work, lack of skill, improper workmanship, and improper materials, can create hazardous conditions. A person should not attempt to do electrical wiring unless he possesses the necessary knowledge and skill to perform it in a safe manner.

There are only two cures for ignorance, the acquisition of knowledge or the use of skilled and dependable help to install electrical wiring.

Our second basic hazard, **"neglect"** creates hazards by various and devious means. Perhaps I can best demonstrate the deteriorating effects of neglect by introducing three people: The Oldtimer, the Bookie's Friend and the Pennypincher.

1. The "Oldtimer" is the chap whose electrical wiring was satisfactory when the house was wired and he sees no reason why it should be looked at or any changes made. He does not realize that there is an inevitable deterioration of electrical wiring which in time renders a good system hazardous.

2. The Bookie's Friend likes to play the odds. He recalls having heard that all safety requirements provide a margin of safety. Consequently he feels justified in slightly overloading his electrical system and the equipment it supplies. Of course he doesn't realize he is making himself a fugitive from the law of averages.

3. To the Pennypincher quality, as such, means nothing. He purchases equipment as cheaply as possible and uses it until it is falling apart. He has accidents on the highway because he would not have his faulty brakes repaired. He falls down the stairs because he didn't want to pay to have a light burning in the hallway; and burnt down his house because there was still a little time left in the old wiring.

How can we cure neglect? Neglectful owners must be taught that in wiring, a penny saved is a lifetime lost. That lifetime lost may be an actual life or the sweat and toil which created the savings that went up in smoke. Only this realization can prevent neglect.

As regards willful misuse, education is probably useless. Careful inspection and stringent legal action is the only sure cure for the one who willfully contravenes safety requirements.

What are the symptoms of misuse? The symptoms of misuse are undersized wiring, overloaded equipment and substandard circuitry, such as poor grounding, bad joints, and wrong type of insulation. The misuse of electrical equipment may be due either to the owner or to the racketeering-type electrical contractor. In any event the saving of money with an utter disregard for safety is the motive of either. Their desire is to get as much as they can for as little as possible.

The Electrical Contractors' Association of Ontario is much concerned about unqualified electricians practicing as part-time contractors. It is hoped some time to get an act requiring them to be licensed. Municipal authorities have the power to license contractors according to set standards.

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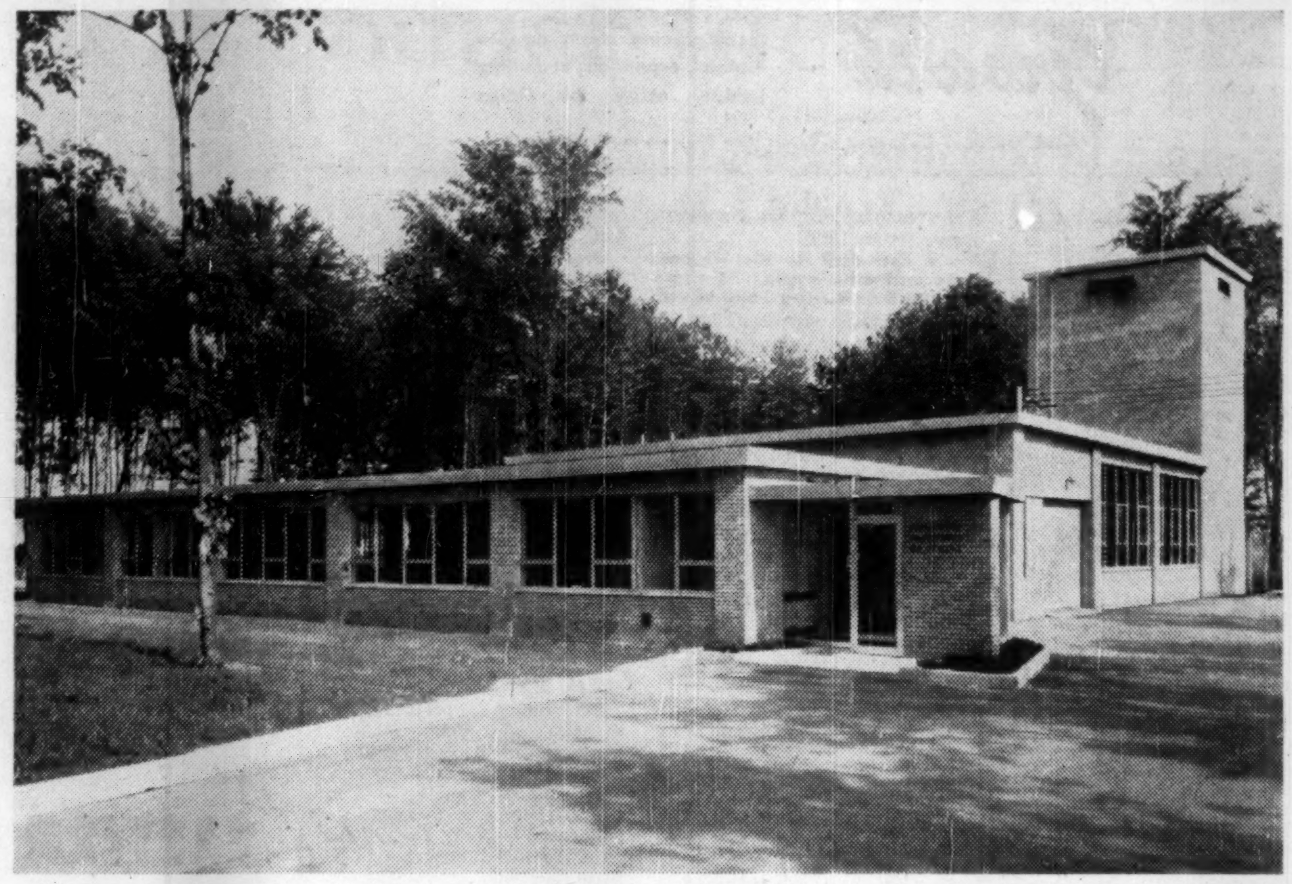

UNDERWRITERS LABORATORIES of Canada building, Scarborough, Ont.

Fire Is Bad Business

J. N. T. BULMAN
President,
Canadian Manufacturers' Association

A single fire in which 479 Canadians perished and property worth $91 million was destroyed would unquestionably be deemed a national disaster of shocking magnitude and be long remembered as such.

When, however, as in 1954, such tragic loss of life and property is spread over a year and is the sum total of more than 68,000 separate fires, the impact on the public consciousness is very much smaller.

Yet the tragedy is, if anything, compounded because nearly all these fires were the result of somebody's carelessness, negligence or indifference. Whether they broke out at home, in the factory, or wherever, most of them need not have happened.

This is the stark reality behind repeated pleas for greater care.

More people, more children, more homes, more factories, more buildings of every kind: all these, inevitably, make for increased risk of fire.

Industry, especially, is spending a vast amount of time and money every year to counteract the greater hazard. Fire-fighting apparatus and general organization are regularly overhauled and constantly improved.

Yet, so often, in this as in so much else, the final responsibility for making sure fires don't get a chance to start is that of individual men and women.

The annual toll of lives and destruction of property, both private and industrial, is a grim reminder that there is no room for complacency on the part of any one of us.

Fire prevention, in a sentence, is everybody's business.

HAROLD M. TURNER,
President,
Canadian Electrical Manufacturers Association

Canadian electrical manufacturers are deeply concerned about the problem of fires resulting from electrical causes.

We are doing a great deal about it already. For many years, we have worked closely with the Canadian Standards Association in establishing safety requirements for the design of electrical equipment.

We believe, therefore, that safety is designed and built into every electrical product, as far as it is humanly possible to do so.

In addition, we are working closely with all other segments of the electrical industry—the utilities, distributors, dealers, contractors and inspectors—to establish sound practices in the application of such equipment.

Of course, the great flood of electrical products coming into daily use provides us all with a constant challenge in this field. Nevertheless, we believe that the installation of electrical equipment, broadly speaking, does not constitute a fire hazard.

We feel simply that the property owner himself too often fails to insist upon an adequate electrical system within his own facilities, to serve the many new and more powerful electrical products he requires. This electrical system of wire and cable, fuses or circuit breakers, switches and outlets is entirely the owner's responsibility.

Too often, when building, buying or remodeling, he fails to insist that it be big enough to do the job he requires, efficiently and safely.

Too often, his builder and electrical contractor — under today's intense competition — are willing to meet only minimum requirements.

The result in the large majority of cases is a wiring system that is scarcely adequate for today's need — and may be dangerously inadequate for tomorrow's.

In our opinion, the solution lies largely in a long-range educational program. The Canadian Electrical Manufacturers Association, therefore, is now embarked on a full-scale program of this type, starting in 1957. It is aimed primarily at the "area of decision" — the owner, builder and electrical contractor.

It will be put into effect in co-operation with all other segments of the electrical industry. The focal point for this program is the Canadian Adequate Wiring Bureau.

Above all, the electrical manufacturers will continue to work closely with government authorities, at every level, in helping to implement laws and regulations to ensure public safety. These include fire marshals and fire chiefs, electrical inspectors, CMHC and many others.

We offer our full support in reducing the tragic loss of life and heavy toll in property damage from fires resulting from electrical causes.

EDWARD C. WOOD
President,
Imperial Tobacco Co. of Canada

The establishment of a special Fire Prevention Week is one very effective way of bringing an important subject to the notice of all Canadians who collectively share the dollar loss of Canada's yearly fire toll. At the same time, there are 51 other weeks of the year when Fire Prevention itself is of equally urgent importance.

Fire Prevention is not a one-week job — it is an all-year-round job of fighting carelessness. As such, it is the job of every Canadian.

Active testimony to the fight against carelessness are Canada's 25,000 firefighters. Six thousand of these are professional officers and firemen. The remaining 19,000 are volunteers.

All these specialists respond unselfishly and bravely to the call of "Fire!" which is no respecter of any one week in the year.

Because of my company's active Fire Prevention Program I have had the opportunity to meet and to talk with many of Canada's firefighters.

All of them insist on one important thing — that human carelessness is the real cause of fires. Firefighters do not blame an inanimate object like a pile of oily rags for starting a fire. Yet human carelessness assuredly can be blamed.

A consideration which offers hope of improvement is that human beings can teach themselves to be careful. That is why the positive virtue of carefulness has been the dominating theme of my company's Fire Prevention Program for a number of years.

Well known throughout Canada is the full-color medallion with the ABC slogan of Fire Prevention education "Always Be Careful." Over two million signs of various sizes have been distributed to Canadian groups interested in Fire Prevention.

The slogan "Always Be Careful" focuses attention most strongly on the fact that Fire Prevention is a 52-week-a-year job for everyone. The two million "Always Be Careful" signs which can be seen in the forests and in rural, suburban and metropolitan areas are, we hope, a constant reminder to all Canadians to back up our firefighters from day to day.

Fire has always been man's friend as well as his foe—it can also be his inspiration to "Always Be Careful."

W. J. SCOTT
Ontario Fire Marshal, and President, Association of Canadian Fire Marshals

Canada's annual fire waste of about five hundred lives and $100 million worth of property per year is both appalling and needless.

This loss of life is appalling from both the humanitarian and economic viewpoints. Death by fire is a horrible way for anyone to die, and the survivors are permanently scarred in mind or body.

It is doubly tragic that so many fire victims are little children who are unable to protect themselves and who had relied on grown-ups to preserve their safety.

From the economic viewpoint, it is sheer waste that one hundred million dollars that could have been spent on new products and new comforts has to be channeled to provide replacements.

If Canada did not burn so many homes each year, there would not be the same need for new housing, and the same applies to other types of buildings and to industrial production.

Canada's fire waste is needless, because almost all fires originate or develop through someone's carelessness. Such carelessness may be direct in connection with the start of the fire, or it may be carelessness in allowing hazardous conditions to develop, or it may have been original carelessness in improper design and construction of the building which made it easier for the fire to start or develop.

But the record in other countries shows that if the public are less careless, the fire losses can be drastically reduced.

National Fire Prevention Week is supported by many organizations interested in promoting fire safety, and in this particular campaign the Association of Canadian Fire Marshals is very happy indeed to work with their brother officials at the municipal level, as represented by the Canadian Association of Fire Chiefs, in this endeavor through the media of television, radio, press and poster to further spread the principles of fire prevention.

You're Getting Better Value For Fire Insurance Dollars

You're getting more for your fire insurance dollar than ever before.

Twenty years ago, Mr. Homeowner paid a fire insurance premium of 45c for every $100 of insurance covering a three-year period. This protected him against losses from fire and lightning only.

Today he pays 40c per $100 for his three-year policy. And this premium covers not only fire but also a sharply extended range of perils.

This means that on a $10,000 house, a policyholder paid in 1935 $45 for a three-year policy against fire perils only. Today that same house is worth approximately $27,000 and the premium — for fire plus other causes of damage — would be only $108.

In 1935 policies as a rule covered the peril of fire and lightning only. In successive widening over the years — culminating in last year's new extended cover policies — the fire premium in the usual policy has been broadened to cover losses from:

—Windstorm including damage to property outside the house itself, such as awnings;
—Impact of motor vehicles and aircraft.
—Smoke damage from faulty furnaces or stoves.
—Glass breakage.
—Riot and civil disturbance.
—Rupture of water or other pipes.
—Collapse, explosion.
—Damage due to theft; malicious damage.

And there has been another change of benefit to policyholders. Originally, fire policy holders could recover loss only. But now houses may be insured for replacement value — an important factor in times of climbing real estate values.

Exactly what is covered depends on the individual policy. But on the whole the trend has been to widening benefits at lower costs.

That's the trend. Will it continue?

Fire insurance has cost less in effect over the years because of better building regulations, better fire prevention and fire fighting, competition between the insurance companies. It's all worked out to the advantage of the policyholder.

But there are warnings of a possible reversal in the down trend, say insurance men. The companies fire loss ratio is climbing.

Most recent company experience — for all types of property —shows that in 1955 over 57c of every fire premium dollar earned was paid out in policyholder claims. The year before this payment was less than 50c per premium dollar. Claims rose 17.6% during 1955 to top $88.4 million.

Big question is: Can fire policies be widened and premiums cut if the companies' loss ratio doesn't improve?

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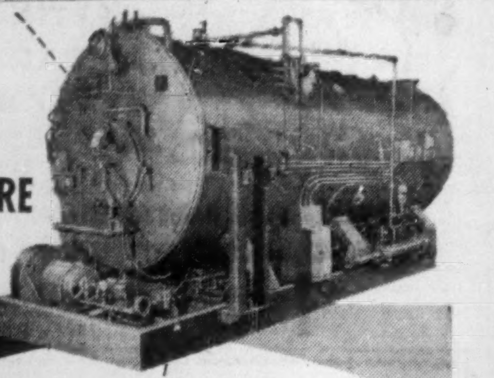

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Growth

Manufacturing plants new to Canada, expansions of existing industry across the nation

Areas, industries are invited to report their progress in this column.

Rosy Outlook for Sask.

The industrial picture in Saskatchewan never looked healthier nor the economic future brighter than it does today. And here are some multi-million dollar reasons as listed by the provincial Industrial Development Office:

- The $8 million plant of **Saskatchewan Cement Corp.** on a 320-acre site in the Regina area started crushing operations a week ago and is now swinging into production of cement.
- Construction of a $3 million plant by **Prairie Pipe Manufacturing Co.** for production of resistance welded steel pipe was scheduled to begin near Regina this month, with the completion date set for 1957.
- Estimates for the **Waskesiu Forest Products** pulp mill, proposed for Prince Albert, will be completed next month. They are being prepared by **Stadler, Hurter,** Montreal engineering design firm, and **Lumnis & Co.,** New York.
- The pace of oil exploration and development activities in southeast Saskatchewan has broken all previous records for the province.
- Now under construction, scheduled for operation next month, is the $2.9 million, 59-mile pipeline extension of the Cantuar-Regina system, being built by South Saskatchewan Pipe Line Co., Regina. It will link up the oilfields of the southwest.

* * *

ANNOUNCEMENT

S. Joseph Tankoos, Jr., of Tankoos & Co., New York and a Director of Tankoos Yarmon Ltd., Toronto realty investment firm, has been appointed as official representative of the Real Estate Board of New York at the Annual Conference of the Canadian Association of Real Estate Boards to be held at Halifax, Nova Scotia, October 1 to 3.

Mr. Tankoos has played a prominent role in the development of Canadian real estate with the support of United States investment funds placed by Tankoos Yarmon Ltd. in Canadian commercial and industrial properties from Montreal to Calgary, representing in total over $20,000,000 in American funds.

Four Cement Lines

The cement plant will employ 100 people and have a production capacity of 850,000 bbls. a year. It is another example of the recent surge of new industrial enterprises initiated by Western Canada businessmen. In this case, chairman of the company board is George R. Whitmore, Regina, and president is Richard D. Welch, Vancouver. Members of executive and board include Calgary and Saskatoon businessmen.

The plant will produce four types of cement—standard Portland, high early, oil well, and modified sulphate. The corporation has large limestone reserves in the Mafeking, Man., area where the stone is crushed and then shipped to Regina. Clay comes from property acquired by the corporation northeast of Regina, silica sand is obtained near the plant, and smaller amounts of iron pyrites and gypsum required for the production lines come from Manitoba and B. C.

The corporation will concentrate sales in Saskatchewan but also sees marketing areas in eastern Alberta and western Manitoba. It will supply direct to oil well cementing companies, concrete product manufacturers, and ready-mix producers as well as to major projects and established building supply outlets.

* * *

Contracts Awarded

Steel pipe from 3½ in. to 16 in. outside diameter, using steel from eastern Canadian mills, is planned for production at the Prairie Pipe plant, which will cover 110 acres, five miles north of the city of Armour on CPR trackage.

Here again is a sign of the Western Canadians launching out on their own resources. Prairie Pipe is a newly formed company reported financed by a group of Canadian businessmen with a large portion of the capital raised by Saskatchewan people.

Engineering and construction contracts, reports the Industrial Development Office, have already been awarded. Directors of the company are M. A. MacPherson, Sen., George Solomon, Norman Whitmore and J. W. Sharp, all of Regina, Gordon Osler, Winnipeg, Francis E. Shaw, Sarnia and J. N. Turvey, Vancouver.

Sharp is also vice-president and general manager of Saskatchewan Cement Corp. and Turvey is comptroller of that cement enterprise.

Oil and gas construction will be primary markets for the output.

* * *

Pulp and Oil

It has been unofficially estimated that the new pulp mill at Prince Albert will represent a $50 million to $60 million project. Waskesiu Forest Products is a new company and its president is Robert G. Campbell.

Lumnis & Co. has been asked to quote a price for the finished mill and, it's reported, construction will begin when financial arrangements are completed.

On the oil situation, the report is that activities in recent months in the northern portion of the Williston Basin area of Saskatchewan have been on a scale never before known in the province.

During the first half of this year, in southeast Saskatchewan, 186 development wells were drilled and 171 were completed as oil wells. Brought in successfully were 16 of 43 wildcat wells. It's estimated that about 500 wells will be drilled in the southeast area this year.

Over the last ten years, the oil explorers have swung their attention to various parts of Saskatchewan. Early on, the interest was in the Lloydminster-Lone Rock area, then it moved to the Kindersley-Coleville-Smiley area. Discoveries at Fosterton in 1952 brought emphasis to the south, and now, though there is considerable concentration in the southeast part of the province, there is still a lot of activity in the western areas.

At the end of 1945, Saskatchewan oil production was about 45 bbls. per day. Now it can reach more than 47,000 bbls. daily.

* * *

New Plant Plans Growth

And yet another example of Prairie-sponsored enterprise. This time, it's in Alberta where the $1 million plant of **Zeidler Plywood Corp.** was officially opened this week in Edmonton.

Using plywood from Alberta poplar trees—formerly considered useless in the building trade, the plant has a one-shift output capacity of 500 panels of 4 ft. by 8 ft. seven-ply.

President of the company, W. R. Zeidler, Edmonton has already announced that plans are under way to increase the capacity. It's claimed that, when full-scale operations are in effect, nearly 650 people will be directly supported by the plant, although at present about 50 are employed on an eight-hour shift. Three-shift operation is planned for the near future.

C. V. Geddes, Prince George, B.C., is first vice-president of the company, and second vice-president is H. Lloyd Reynolds, who is also president of Reynolds Mfg. Co., Edmonton garment manufacturing company.

* * *

B. C. Building Pace

Completing the bright colors of the western economic picture is the report of the construction industry boom in British Columbia.

It includes roads, bridges, factories, offices, pulp mills and even residential building. Lack of skilled tradesmen is reported to be a major problem.

Building permits issued in Vancouver up to the end of last month for new construction totalled just over $45 million, which is coming close to the total for all 1955. In Victoria $6 million was spent on new public buildings and plants in the fiscal year 1955-1956.

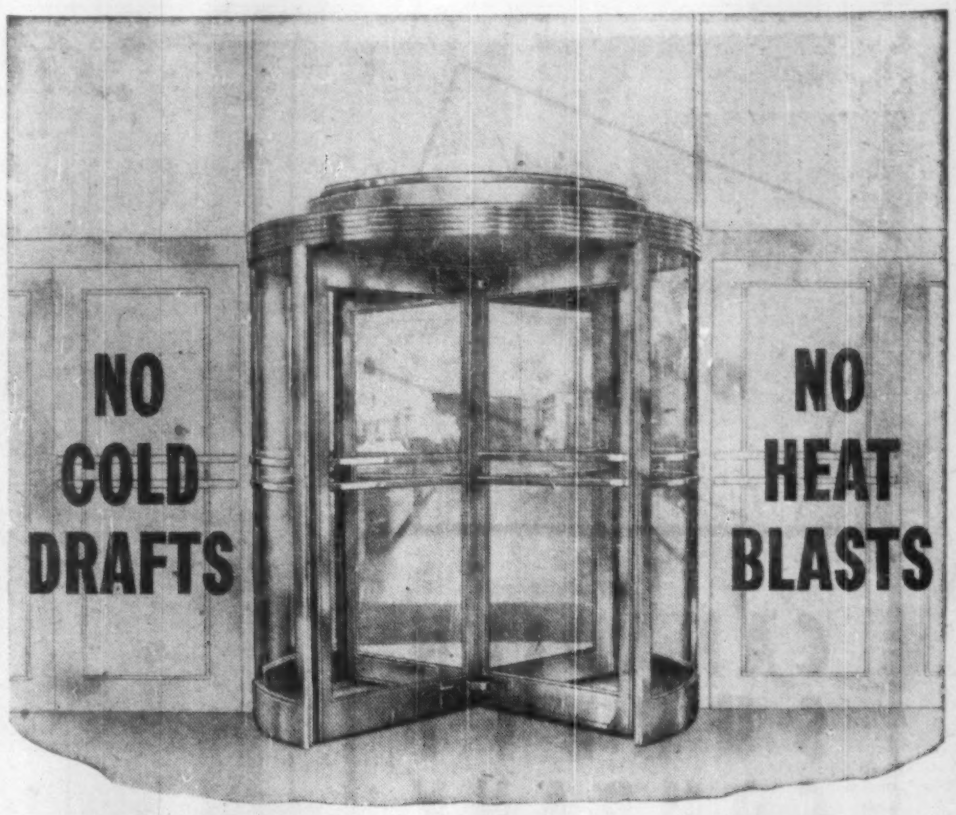
* * *

First Off the Line

A rugged 80-hp. diesel-powered tractor shovel—first of its kind to be made in Canada—rolled off the production line recently in a new factory at St. Thomas, Ont., and is now in operation on a construction site in the area.

The shovel was a model 75A Michigan, and the factory, now in full production with the shovels rolling off the line, is that of **Canadian Clark Ltd.** That first shovel was sold by the Ontario distributor of Clark equipment—**Innes Equipment Ltd.,** the Canadian division of **Blackwood Hodge**—to **Keillor Construction,** which has its headquarters in St. Thomas.

The new factory represents a hallmark in the growth of enterprise as well as practical indication of the widening market for construction equipment in Canada and the increasing attention which major foreign manufacturers are giving to that market. Canadian Clark is a subsidiary of **Clark Equipment Co.,** Benton Harbor, Mich., and was established to meet the demand and provide faster delivery of Clark equipment to Canadian construction companies.



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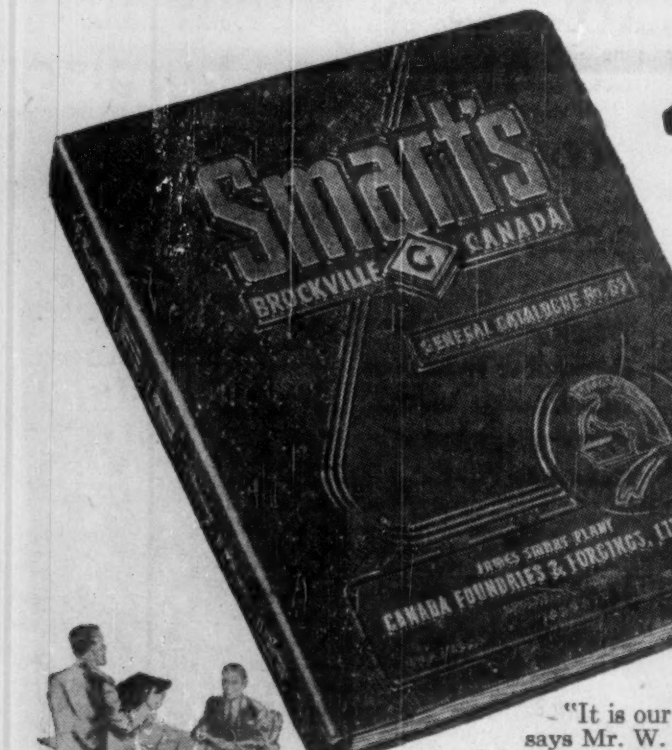
Food Ingredients

Also from Montreal comes the report of higher output planned by **Food Products Ltd.**

The company has started construction of an addition to their existing plant in St. Patrick Street, Montreal, which will double its manufacturing space.

President Frederick Kahn states the extra space is needed for production of new lines of food ingredients upon which the company has embarked. These include spices, binders and cures. Food Products has been making ingredients for the food, beverage and pharmaceutical industries for more than 20 years.

Our Salesmen felt a new sense of importance...
when we dressed up their General Catalogue with modernized covers.



*

"It is our conviction," says Mr. W. R. Noakes, Sales Manager of Canada Foundries & Forgings Limited, Brockville . . . "that our salesmen should always feel proud of their Company and the products they are selling.
With this in mind, we discarded the standard black covers of our General Catalogue and adopted modern, attractively-coloured bindings with a smart arrangement of title and trademark.
Our salesmen were enthusiastic about the change and said that the new covers helped them to present their selling catalogue with more confidence.
We were gratified that so simple an innovation should prove so effective."

A CORRECTLY DESIGNED COVER IS A BIG FACTOR IN CREATING THE RIGHT IMPRESSION!

Managing executives are unanimous about this: as a result Companies by the score have adopted specially designed covers for General Catalogue; Catalogues; Parts Manuals; Price Lists; Presentations, etc. A big advantage when planning special covers is . . . that at Brown Brothers Limited . . . every stage of production, from first sketches to finished binding, is processed under one roof. An important factor in lower cost! Standard designs in covers offer a wide choice . . . but a more distinctive touch is achieved by using a design specially created for you. We'll gladly place on your desk specimens of custom binding, and sketches of cover designs, together with all details on production and price.
You can either fill out the coupon below, or call our Sales Promotion Department, PLymouth 5-5201.

*ANOTHER PRODUCT
THE BROWN BROTHERS LIMITED
VANCOUVER TORONTO MONTREAL

THE BROWN BROTHERS LIMITED
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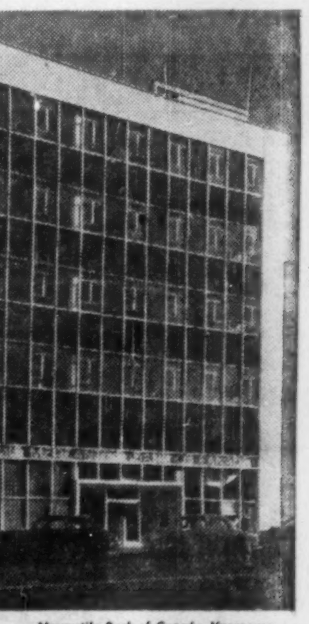
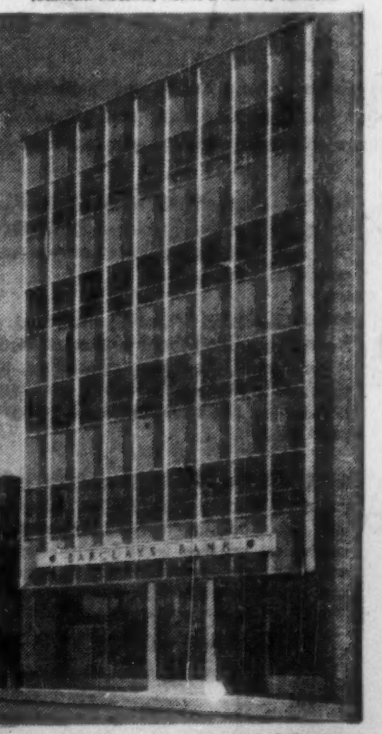
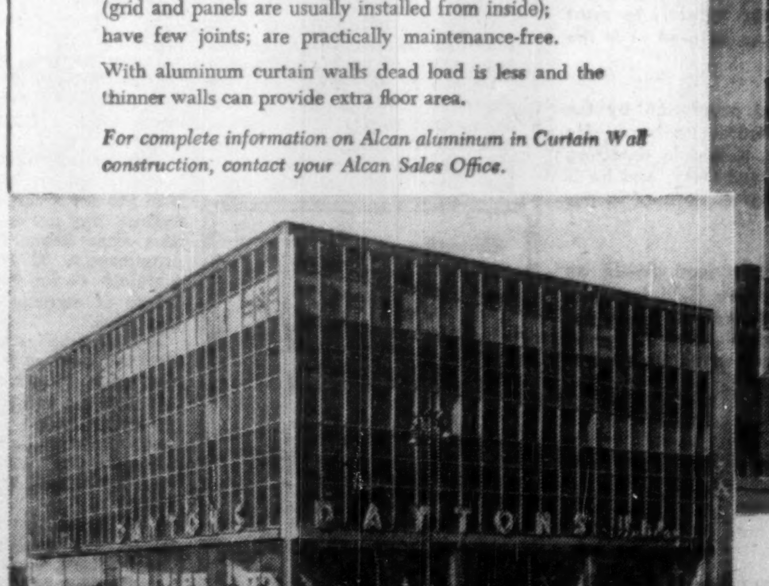
We believe we have an application for Custom Covers. We would like to hear the full story.
NAME ____
COMPANY ____
ADDRESS ____
DEPT. ____ TELEPHONE ____

Winning wide acceptance in Canadian Construction . . .
ALUMINUM IN CURTAIN WALLS


Mercantile Bank of Canada, Vancouver
Architects: McCarter, Nairne & Partners, Vancouver

Smart Appearance and Exceptional ECONOMY have been decisive factors in establishing the trend to curtain wall construction in Canada.
Over 50 major Canadian buildings have already been built using this type of wall. Many more are on the way.
Curtain walls go up fast and easily; require no scaffolding (grid and panels are usually installed from inside); have few joints; are practically maintenance-free.
With aluminum curtain walls dead load is less and the thinner walls can provide extra floor area.
For complete information on Alcan aluminum in Curtain Wall construction, contact your Alcan Sales Office.


Barclay's Bank, Toronto
Architect: Blake H. M. Tedman, Toronto


Dayton Building, Winnipeg
Architects: Green, Blankstein, Russell & Associated Winnipeg

ALCAN ALUMINUM COMPANY OF CANADA, LTD. ALCAN
CALGARY • HALIFAX • HAMILTON • MONTREAL • OTTAWA
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Why Do Product Ideas Flop?

Got a new product to put on the market? Is the idea a "winner" that is bound to sell? Don't go overboard. Four times out of five new products will fail.

Experts in Canada and the U. S. admit that this is the rate of failure. What are they doing about it? Here are digests of solutions discussed at a special session of the National Industrial Conference Board last week in New York:

Many Points Must Be Cleared And The Answers Interpreted

By E. A. CLASEN
Director of Marketing,
Pillsbury Mills Inc.

As far as future profits are concerned, the heart of all testing lies in accuracy and completeness of the information we get about repeat purchases. We have to know:

—How many people are intrigued enough about the product to purchase it.

—How many people will repurchase and how often.

—The repurchase rate, particularly on products sold through stores that require fast turnover.

In general, it takes a strong team to do the job within a company. Under today's competitive situation a company must be good in every department to assure profits from new products.

The research department has a major responsibility. They must consider alternate formulas for economic as well as quality reasons. Research can also contribute in the area of packaging, where there are substantial profit opportunities to be considered. Here are other points:

Can the product be imitated easily and quickly?

If you are first in a home with a new product and if it is satisfactory you definitely have a head start for greater profits.

What happens when a product is difficult to imitate? When you are alone in the field you can regulate your expenditures quite easily because the only thing you have to argue with is the total market rather than a share of the market.

The area of pricing a new product is important to profits. Profits are secondary to the main point of getting your idea across. People are willing to pay a reasonable price for what they want. On new products in particular consumers rarely have a common denominator, and 2-3c per package makes very little difference between success and failure.

After the introduction and after the idea has got across, then get prices in line.

Immediate volume is essential. The space on the grocery shelf is too valuable to permit experiments with slow-moving, unprofitable products.

The success and profitability of new products, we believe, rests with marketing management. Our research departments, both technical and commercial, our production departments, and all the other departments that concern a new product interest, only serve those of us in marketing management.

More Products Will Succeed If These Tools Can Be Used

By D. R. HULL
Vice-President,
Raytheon Manufacturing Co.

In introducing the new product, it is important to recognize the inter-relationship of previous phases of effort, such as estimating new product demand and pretesting the new product. Intelligent planning of these initial efforts should be made so as to develop sufficient information for use in handling publicity, sales promotion and advertising programs that lie ahead.

Top management's role is to evaluate the risk factors and make a decision as to the extent it is willing to invest company dollars in marketing the product. Making this decision will require adequate insight into such factors as:

- The type of market to be reached;
- Geographical limitations on the product's distribution;
- Seasonal demand;
- Handling sales through present channels of distribution;
- Patentability of the product;
- Pricing;
- Prospects of continued sales once the product ceases to be new.

Co-ordination of all related activities within the company is most important. A proper organization of company personnel is required to assure that direct responsibility for handling the market introduction is placed with one or two persons, reporting to top management.

Proper timing is important to assure that there is not a premature disclosure or that the product is not introduced at a time when insufficient information has been developed about the potential market.

Publicity, advertising and sales promotion may be considered as the three basic tools for successful introduction of the new product.

Publicity efforts involve maximum use of the press, radio and television for effective presentation to the public.

Advertising and sales promotion activities require a carefully planned schedule to fit in with budgets which have been established. Some type of co-operative advertising with distributors and dealers will make up the program.

Sales promotion activities will require the full use of promotional material, sales incentives and education of the sales force. Trade shows are a desirable medium for introducing the product.

Product scheduling for initial production runs requires a balancing of risk elements between over-estimating and under-estimating demand. In evaluating these risks, it is important to keep in mind that dealers will not want to be caught short when demand is generated by advertising.

This Company Made Mistakes They Started The Wrong Way

By G. A. DAUPHINAIS
Vice-President and General Manager,
Quaker Rubber Division,
H. K. Porter Co., Inc.

Several years ago it became apparent that plastic lawn hose was here to stay even though there seemed to be all sorts of rationalizations about the fact that rubber was better. The plastic hose was cutting into our sales of rubber hose.

When we faced this situation, we made what we thought at that time to be an estimate of demand for this new product. A number of accounts advised that their sales of the plastic hose were at a certain percentage versus rubber. Using averages, we could tell what the demand was and, since the trend was up, it looked good as a new product.

After getting into this business, however, we learned many additional things about manufacturing and raw material requirements, and competition's policies, all of which had a large effect on demand as far as we were concerned.

Eventually we learned the answer to these questions in reappraising our situation in view of the small return we were getting. Changes were made in the line; new equipment was added and processing was changed to correct inadequacies.

We could have avoided a lot of this by doing a more thorough job at the beginning and getting started with a plan more like what we came up with after a disappointing start.

The problem of estimating demand for the new product is one which is generally tackled at some time before a decision is made to manufacture and market the product. At this time it is of primary concern that all possible facts be at hand in order that sound decisions can be made.

The question is when shall we consider that we have the facts? Reflecting on our experiences, I would say that we have estimated demand for the new product when we have:

- Calculated the present demand;
- Determined the trend;
- Checked on seasonal functions;
- Pinned down distribution patterns;
- Estimated the effects on demand for present production.

If something similar is already being marketed, the following must be determined also:

—Determined who the competition is;

—Determined competition's policies on; pricing, packaging, advertising, promotion, warranties, and factors affecting capital considerations such as stock consignment and special payment terms, such as dating;

—Calculated approximately what portion of the total demand we can expect to lay claim to.

These are all marketing facts and how effectively we handle them and weigh their importance will determine the demand we can expect to experience. These answers, at best, will be close approximations, and they will permit a successful course in proportion to their accuracy.

Pretested Products Do Sell But Note These Differences

By S. J. BEGUN
Director of Marketing,
Clevite Corp.

Product pretesting, whether in the consumer goods or industrial market, aims at obtaining more reliable information on whether a new product has advantages over existing products.

Pretesting is no guarantee of success but lessens the chance of major miscalculations. Analysis of pretesting in each of the two markets reveals only one basic similarity. In both, products must be pretested for quality and performance and for their chances of initial consumer acceptance.

A product may have perfect performance yet may lack some hidden appeal without which it cannot gain acceptance. Here the similarity of pretesting in the two markets ends. Important differences may be noted:

(1) The number of prospective customers in the consumer goods market is usually very large and consumer likes and dislikes depend on many intangibles which are unknown to the vendor. In industrial markets the reverse is the rule. Customers are far fewer; their needs are better known and, hence, influence of intangibles is greatly reduced.

(2) Pretesting in the consumer market is more complex. Acceptance may hinge on a number of factors unrelated to product performance. Color, taste, odor, consistency, ease of use, package design, and ability to remember and pronounce a brand name can all have an influence.

Pretesting in the industrial market is less complex. Many items are bought "from the print." The customer knows what to expect. If the product meets required specifications and is priced right, he will probably buy.

(3) Time-tested, statistically reliable methods are available to assist pretesting in the consumer market and many reputable concerns offer professional services. These are not available to the industrial market; hence, pretesting methods are much more empirical. In most cases each job has to be done differently.

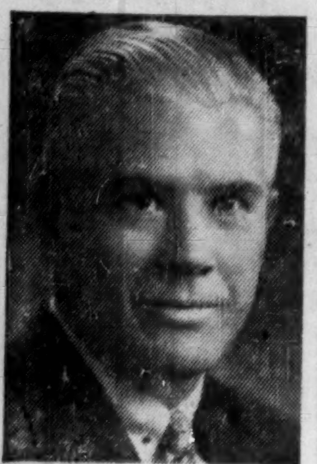
(4) Buying motives differ. In the consumer goods market, the vendor has both rational and emotional buying motives to contend with. The latter may prove all-important when commercial sale is attempted. A promising product in the pretesting period can fail when put on sale because some unforeseen emotional appeal is lacking.

(5) Products of a technical nature pose a special problem in the consumer market which is absent in the industrial market.

The philosophy of product pretesting at Clevite Corporation is governed by the fast-moving technology in the two major areas the company serves, namely, electronics and horsepower. New product thinking is projected far into the future and little gain is seen in developing new products which make no significant contribution to technical progress.

ANNOUNCEMENT

J. WALTER THOMPSON APPOINTMENT



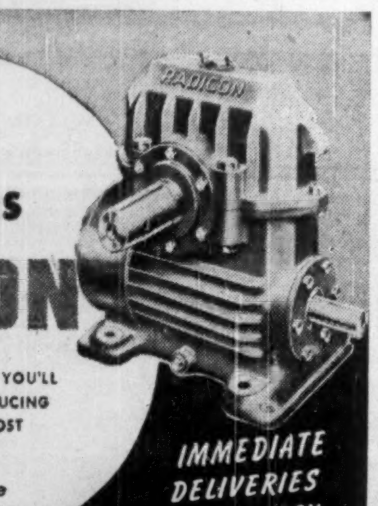
FRED LOWREY

J. Walter Thompson Co. Ltd. (Toronto), announces the appointment of Fred Lowrey in a senior creative capacity. Prior to joining JWT, Mr. Lowrey was advertising manager of a well-known insurance company, and had previously worked for many years in the advertising agency field.

After serving overseas he was editor of a Canadian Army unit newspaper. He is co-founder of the Advertisers Guild, Toronto.

Thinking of a MOBILE SALES• UNIT?

GLENDALE MOBILE HOMES LTD.
R.R. 1, LONDON, ONT.



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Sometimes just a little more money is needed

Financial emergencies often arise when least expected. And "rainy-day" savings aren't always adequate to meet them or perhaps should not be disturbed.

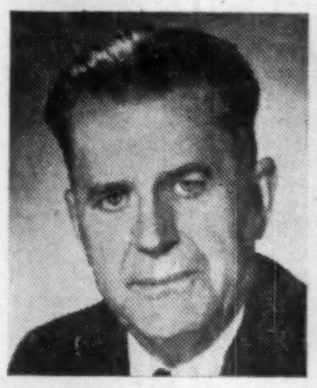
That's when a Beneficial loan can be helpful. The amounts are small, averaging around $400, but they do a big job for the families they help. And by helping families, they help the whole community. The Beneficial Finance System has been providing this vital financial assistance for more than 40 years.

". . . a BENEFICIAL loan is for a beneficial purpose."

Beneficial Finance System

Beneficial Finance Co.
Beneficial Building, Wilmington, Del.
CANADIAN SUBSIDIARY: BENEFICIAL FINANCE CO. OF CANADA
HEAD OFFICE: 2010 Yonge Street, Toronto
MORE THAN 1000 OFFICES IN THE UNITED STATES, CANADA, HAWAII AND ALASKA

ANNOUNCEMENT



ALLEN G. BALLARD

DONALD S. ABBOTT

Allen G. Ballard, President, announces the election of Mr. Donald S. Abbott to the Board of Directors of the Diamond State Fibre Company of Canada Limited. Mr. Abbott is President of the Arborite Company Limited and President of the Alliance Paper Mills and the Don Valley Paper Company and a Director of the Howard Smith Paper Mills. The Diamond State Fibre Company and the Arborite Company are associated as Manufacturers of Industrial Laminates and announce a further expansion in product development that will involve the manufacture of convolute wound laminated tubing and moulded rod in Canada. Diamond State is a subsidiary of the Continental Fibre Division of the Budd Company Inc., U.S.A.

Another example of FAST-GROWING INDUSTRY in WINDSOR!

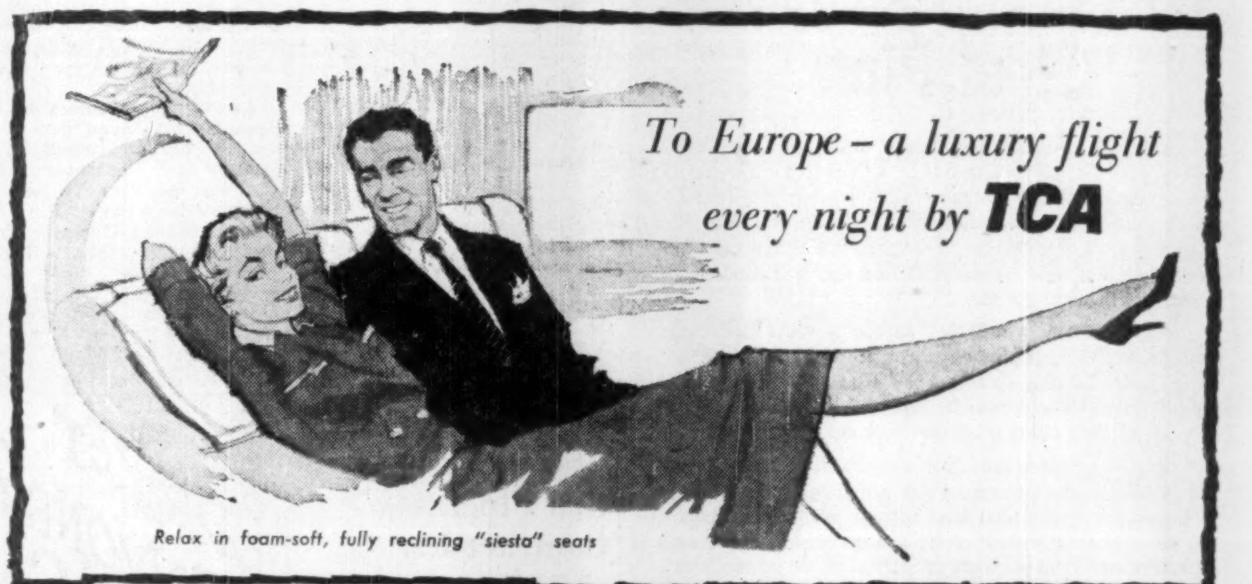
In 1940, H. C. Nelson Chemicals Ltd. began the manufacturing of Alkali Compounds in Windsor. Early this year their new $100,000.00 plant was completed. This new building is three times as large as the old one, and is located adjacent to a good railway siding. With this modern plant and convenient shipping facilities, H. C. Nelson Chemicals Ltd. are looking forward to a bright future.

This is another fine example of Windsor industry's growth! During 1955, Windsor averaged more than one new plant or expansion **every week!** It will pay you to find out about Windsor's industrial growth, and what Windsor offers in choice industrial sites and existing plant facilities.

Write for full details about Windsor, Canada's fifth city in manufacturing production, to Murray A. Elder, Industrial Commissioner,

Windsor Chamber of Commerce
CANADA BUILDING, WINDSOR, ONTARIO

To Europe – a luxury flight every night by **TCA**



Relax in foam-soft, fully reclining "siesta" seats

Meet congenial company in the Club Lounge

Enjoy the finest of food and wine

Going to Europe? Then go in style — *TCA First Class.* Only nine First Class passengers are carried aboard TCA's Super Constellations — you have plenty of room to rest and relax in your fully reclining "siesta" seat. For a change of scene there's the bright, friendly atmosphere of the Club Lounge. As for the sumptuous full-course meals, with choice vintages — nothing finer is served in the air.

TCA flights are *the most frequent* — ten every week to Europe — serving London, Paris, Glasgow, Shannon or Dusseldorf. Stopover privileges en route, onward connections to anywhere in Europe. Full information from your Travel Agent or TCA Office.

National Building, Bay & Temperance St. • Austin Building, 737 Church St.
Arcade, Royal York Hotel • Lobby, King Edward Hotel
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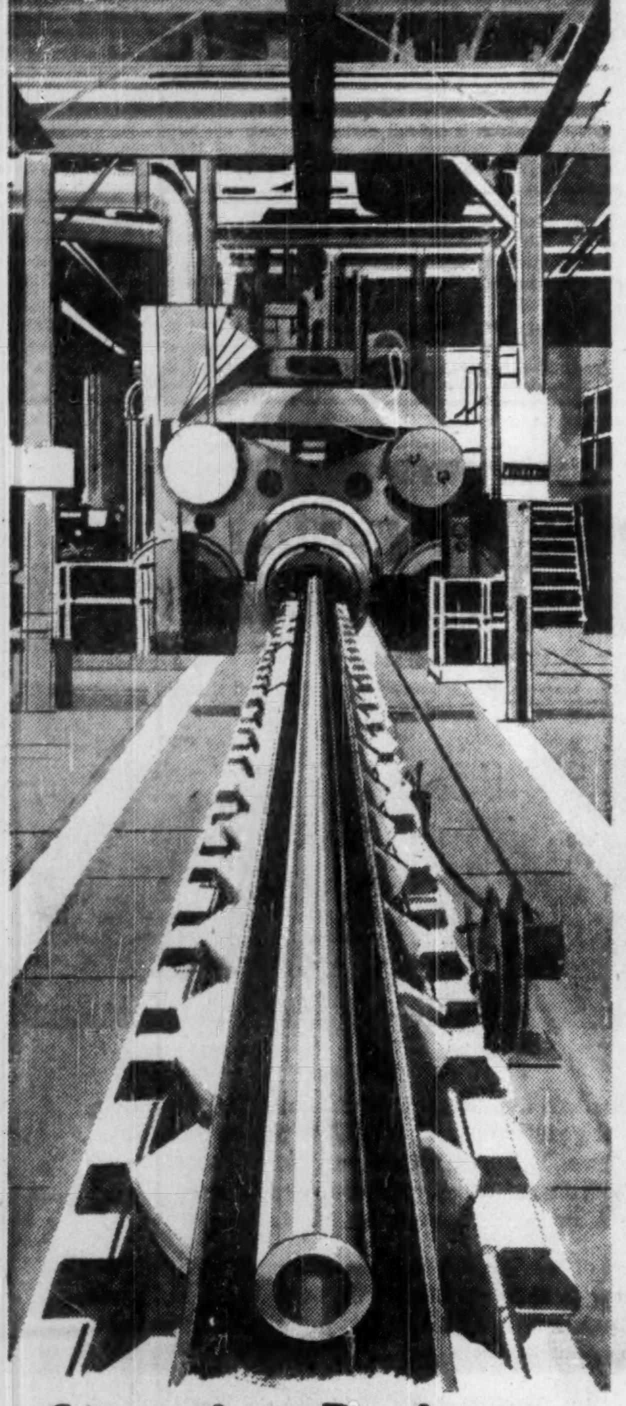
For Reservations call WAlnut 4-4611

TRANS-CANADA AIR LINES

every night to Europe by Super Constellation

For longer life, higher performance in the petroleum, chemical and power industries



Corrosion-Resistant, Heat-Resistant EXTRUDED Steel Pipe

Like a city in darkness for lack of electrical wiring, industry would come to a standstill without pipe. For pipe is the great conductor that carries latent power into useful action. It conducts oil, steam, chemicals, fluids, solids in suspension. It directs the power that actuates giant industrial equipment . . . even guides the flow of radioactive material in nuclear reactors.

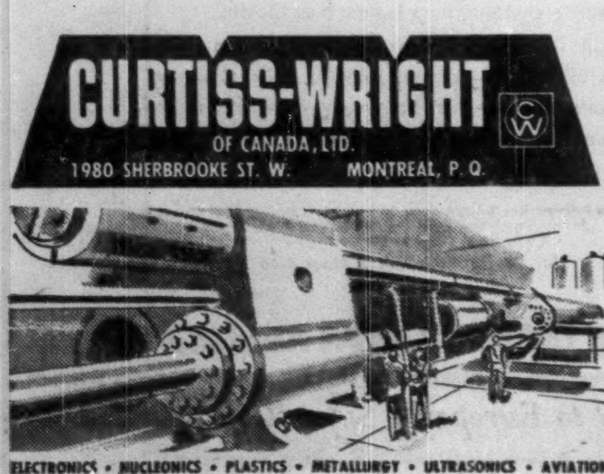
Pipe must be dependable because it must perform under today's higher pressures, temperatures and stresses, which intensify the simultaneous attacks by corrosion from both inside and outside. Pipe that performs beyond the call of duty offers profitable operation with a bonus.

Curtiss-Wright's Metals Processing Division now offers the petroleum, petrochemical and power industries a line of high-quality, extruded steel tubular products to meet the most severe demands of modern processing. Inherent corrosion and heat-resistant properties of the steel alloys used are amplified by extrusion because the finished tube is produced with only one heat, in one pass of a giant 12,000 ton press . . . formed under compression in a matter of seconds without seams, in lengths up to 50 feet. Extra margins of resistance to corrosion and heat are built in easily by extruding heavier pipe wall thicknesses at no sacrifice in production speed. The most up-to-date quality control facilities, including ULTRASONIC TESTING, are employed in production.

This pipe progress is typical of Curtiss-Wright's contributions in the major fields of industry. Though the name Curtiss-Wright may not be on the end-product you use, you nevertheless benefit from the advanced research and development that characterize Curtiss-Wright today.

Write for information regarding your pipe needs.

CURTISS-WRIGHT OF CANADA, LTD.
1980 SHERBROOKE ST. W. MONTREAL, P. Q.



ELECTRONICS • NUCLEONICS • PLASTICS • METALLURGY • ULTRASONICS • AVIATION

Invest With Others in the Family

How Commonwealth Development Finance Aids Business

By R. EWART WILLIAMS
Economic adviser to The Credit Insurance Association Ltd., of London

The provision of capital for economic development is one of the urgent international problems, and when the Commonwealth Prime Ministers met in London in July they recorded their satisfaction at the determination of the United Kingdom to maintain and improve its capacity as a source of capital for Commonwealth development.

It has been calculated that the United Kingdom requires a current surplus of some £300 million to £350 million a year to cover its various capital commitments, which include overseas investment. The objective of the U. K. Government is to reach and maintain a surplus of this size.

Giving A Lead

There are various sources for such investment, but one which is becoming increasingly important—because it operates on special lines — is the Commonwealth Development Finance Co. Ltd. This was created because the 1952 Commonwealth Economic Conference concluded that such an organization was needed to give a lead to other investors and to encourage private industry to develop resources which would improve the Commonwealth's balance of payments.

In investment, confidence is all-important, and the readiness of a leading finance company to sponsor a scheme is regarded by other financial organizations as a good indication that it has been carefully prepared and will be well managed.

The Commonwealth Development Finance Co. Ltd. was incorporated in March, 1953 with an authorized capital of £15 million to be provided by 91 banking, industrial, mining and shipping companies, and by the Bank of England. The chairman, Lord Godber, is also chairman of the **Shell Group**, and other directors include the chairman of **Unilever Ltd.**, the chairman of the Anglo-American group of mining companies, the chairman of the **Imperial Tobacco Co.**, a former president of the Federation of British Industries, and a director of the Bank of England.

Three Categories

The main object of the C.D.F.C. is to encourage others to invest, as is illustrated by the fact that, although it has advanced or promised to advance some £13,500,000, the total amount being invested in these projects from other sources is about £150 million.

The company seeks to provide that any applicant should be able to provide a reasonable amount out of his own resources, even although the whole of the necessary capital cannot be raised in the area where the development is taking place or through normal market channels, and that the project must not only strengthen the Commonwealth resources but also improve the balance of payments of the sterling area, as well as being a sound development project with good management.

Investments so far fall into three clearly defined categories — public utilities which will have far-reaching influence on economic development; private ventures which will improve the Commonwealth balance of payments; and investment in other Commonwealth development corporations.

In the first category, there was a £2 million loan to the Electricity Supply Commission of South Africa for increased power supplies to the gold mines; a £1 million investment in the Sui Gas scheme in Pakistan to transmit natural gas by a 350-mile (563 kilometres) pipeline to Karachi, which was completed last year; and a £3 million participation in the £80 million Kariba Gorge project to provide power for the Rhodesian copper mines, and the general development of the Federation. In each case the World Bank is an important participant, and both in the Kariba and Sui Gas schemes Commonwealth banks and private industry have provided part of the capital.

So far the C.D.F.C. has invested in six private ventures. For example, it has £3 million invested in the **Tasman Pulp and Paper Co.** and is collaborating with the New Zealand Government and the **British Albert E. Read Group.** The newsprint mill is in operation and shipments of newsprint have been delivered to New Zealand and Australia, and of wood pulp to Australia and the U. K.

Another loan has been made to a recently formed South African company which has built a plant to manufacture cellulose pulp from saliga gum grown in Zululand.

The C.D.F.C. has also invested in uranium production in Canada, cement production in New Zealand, sugar manufacture in Rhodesia, and timber production in Swaziland.

Helping Others To Develop

The third category, investment in other development companies, is limited so far to two cases in India and Ceylon. In 1954 the C.D.F.C. agreed, with the World Bank and a consortium of British and American banking, insurance and business enterprises, to invest in the Indian Industrial Credit and Investment Corp. Its purpose is to do in India what the C.D.F.C. is trying to do throughout the Commonwealth — provide an organization which can stimulate economic development — and already investments have been made in paper, textiles, chemicals, sugar and electrical equipment. A similar organization has just been launched in Ceylon.

In recent months the C.D.F.C. has been discussing investment in a similar organization in Pakistan, but negotiations have not yet reached a final stage.

What of the future? In three years of operation the C.D.F.C. has been accepted by Commonwealth governments, the City of London and private industry as a suitable vehicle for development work. Its future value may be increased by the creation of the International Finance Corp., an affiliate of the World Bank with a capital of £30 million intended to provide investment capital in association with private investors. Its declared policy is along the lines of the C.D.F.C., and, moreover, its general manager is Mr. J. G. Beevor, who until recently was managing director of the C.D.F.C.

Lord Godber said in London recently that when the C.D.F.C. was formed in 1953, liaison with the World Bank was one of its intended functions. The creation of the International Finance Corp. should make possible even greater co-operation and an increased flow of funds into the Commonwealth.

Royal Trust Starts New Plan For Pension Funds

A new approach to investment of pension trust assets has been announced by **Royal Trust Co.** with the establishment of three classified investment funds — one to hold government bonds, the second to hold corporate fixed income securities (bonds and preferreds), the third to hold common stock.

Pension trusts participating in this investment outlet can choose their own proportions. Under present governmental regulations, a spokesman for the trust company said, it is not considered advisable to place more than 15% of the pension funds assets in common stocks.

A similar fund, the only other one in North America, was launched last spring by Continental Illinois National Bank & Trust Co., Chicago.

Although the new Royal Trust fund is the first such fund set up in Canada, at least two other Canadian trust companies operate multiple pension trust funds. Under these plans, assets of a number of small (i.e., under $300,000) pension trust funds are pooled in one large investment fund.

Each individual pension trust retains its identity for accounting purposes, but owns a proportionate number of units in the multiple fund. An ordinary form of trust agreement is used, supplemented by clauses permitting the pooled investment principle. No extra charge is made for participation in the multiple fund.

The fee principle is the same in the new Royal Trust investment funds — fees are charged directly to the participating pension trusts at regular rates, with no extra fee charged for management of the classified investment funds.

The pension trust's original decision as to the proportion of its investment to be placed in each of the three funds can be adjusted in the light of experience. Each trust's interest is represented by "units of participation," originally valued at $100 and re-calculated at each month-end on the basis of market value of the securities held.

Income on all three funds is accumulated and distributed monthly.

"By combining with others, the participating trust can achieve the desired degree of diversification," announced Royal Trust. "This increases the security and permits a broader investment policy, with the prospect of enhanced yield."

Freight Aid For N. B. Sheep Men

From Our Own Correspondent

FREDERICTON — New Brunswick sheep-raisers are being encouraged to increase their flocks through a new freight assistance policy designed to interest members of the industry in importing western range ewes for breeding purposes.

Agriculture Minister, C. B. Sherwood explained that to pay freight charges available under the new policy, orders must total at least 180 ewes to justify a shipment from the west to a central point in the Province. Prices to farmers, he added, will range from $12 for ewe lambs to $14 or $15 for ewes up to four years old. Sheep will be selected and inspected in the west by a representative of the Federal Agriculture Department.

$9 Million Gas Pipeline Contract Let

A $9 million contract for transmission and distribution of natural gas throughout the B.C. interior has been awarded to **Dutton-Williams Bros.**, Calgary.

A total of 360 miles of major pipeline, plus hundreds of miles of distribution lines in 44 communities will be under the engineering supervision of **Ford, Bacon & Davis Canada Ltd.** Dutton-Williams will do general construction work on both pipeline and local distribution systems. Early fall of 1957 has been set as completion date.

Orders for Inland's steel pipe that total more than $6.5 million have already been placed, and all has been obtained in Canada. **Canadian Western Pipe Mills** at Port Moody have a large share of the pipe contract, and **Alberta Phoenix Mills** at Edmonton will supply the balance of the pipe. The first lengths of pipe will be laid in the Penticton area on April 1, 1957. Construction of the distribution systems will follow in all areas simultaneously as early in 1957 as conditions will permit.

Surveys of most of the project have been completed. Clearing and grading of the right-of-way is expected to start by Oct. 15. Work will continue throughout the winter, weather permitting. Local sub-contractors with local labor will share as much as possible in the construction of the distribution systems and in the initial clearing and grading of the right-of-way.

Fishermen who begrudge the effort involved in catching live crickets for bait can buy a quart of them, by mail, from a Georgia cricket farm.

We learn that it takes fifteen days for cricket eggs to hatch, eight weeks for the insects to grow to bait size. We note, too, that the brooders where they laze about in 85° temperature, lapping up chicken mash, are made of aluminum. But we confess we're not too surprised. It simply means that this busy metal has found still another use in the busy housing industry — this time providing clean, warm, pleasant quarters for aristocratic crickets. You see aluminum everywhere these days!

ALUMINUM COMPANY OF CANADA, LTD. (ALCAN)

WHITE EMPRESS to Europe

TRAVEL THE "LANDSCAPE ROUTE"

Enjoy a thousand miles of scenic St. Lawrence shoreline on the White Empress "landscape route" to Europe. The White Empress fleet, including the magnificent new Empress of Britain, offers you scores of luxurious ocean travel features, spacious decks, courteous services that have long been identified with Canadian Pacific.

Benefit from the very low Thrift Season Fares now in effect. First Class from $230; Tourist from $157 according to ship and season.

SAILINGS:
From MONTREAL to LIVERPOOL

Oct.	2	Empress of France
Oct.	9	Empress of Scotland
Oct.	16	Empress of Britain
Oct.	23	Empress of France
Oct.	30	Empress of Scotland
Nov.	6	Empress of Britain
Nov.	13	Empress of France
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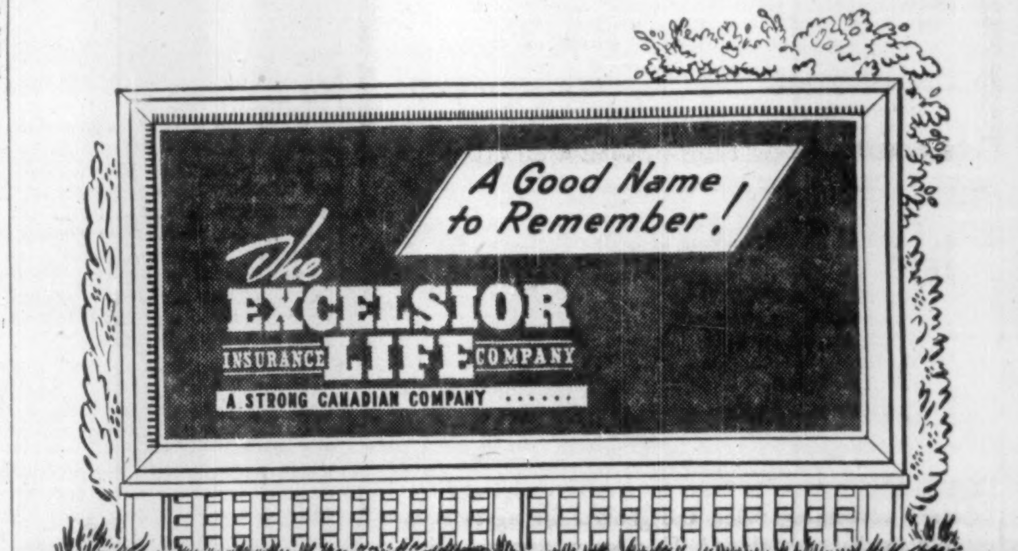

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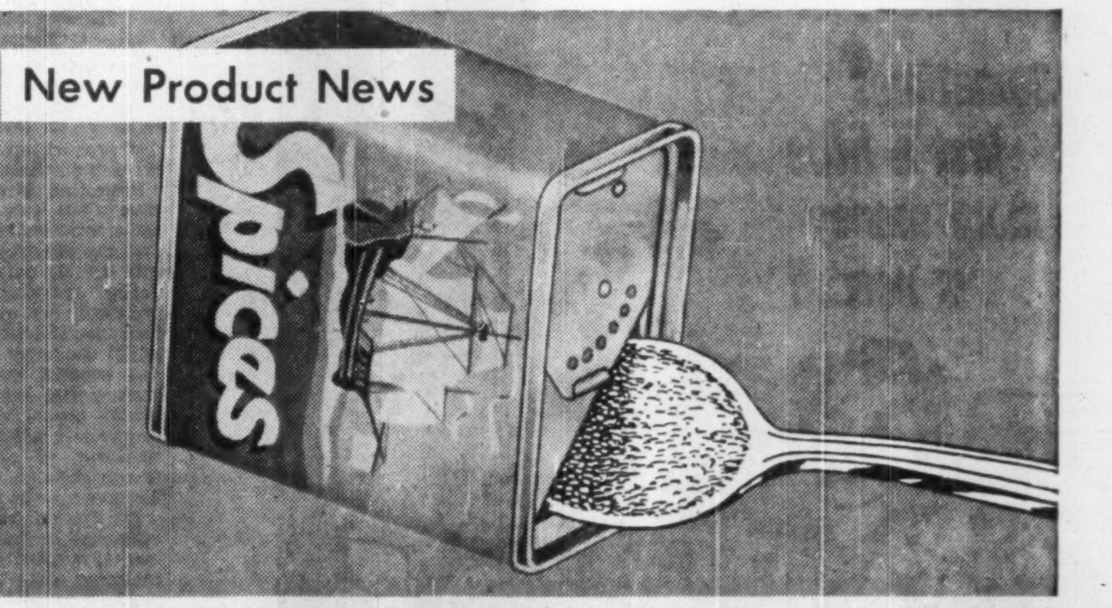

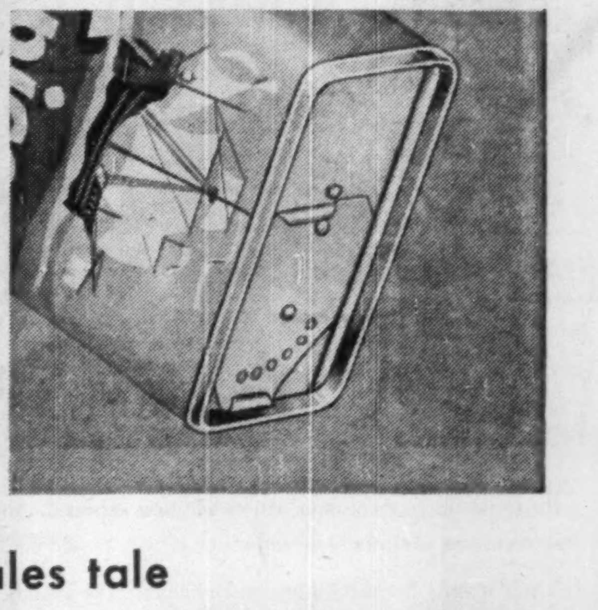

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ANNOUNCEMENT

T. A. BOYLES GORDON J. TOUCHIE

Thomas A. Boyles, manager of The Bank of Nova Scotia's main branch in Toronto, has been appointed an Assistant General Manager. He will be succeeded by Gordon J. Touchie, who has been manager of the bank's main office in Hamilton since 1952.

Both Mr. Boyles and Mr. Touchie bring many years of varied experience to their new posts. Mr. Boyles, who began his banking career 35 years ago, has held a number of executive posts at the bank's General Office in Toronto, and was manager of the BNS main Ottawa branch before becoming manager of the Toronto main office in December, 1952. Mr. Touchie entered the bank's service in Newcastle, New Brunswick, in 1927, and prior to his appointment at Hamilton was senior assistant manager at Toronto main office.

Urge Ottawa-Backed Program To Prevent a 'Timber Famine'

From Our Own Correspondent

WINNIPEG — Representatives of federal and provincial governments, industry and interested public organizations took a careful look at what is happening to Canada's forest resources at a National Forestry Conference here last week, first of its kind in 50 years.

Concerned mainly about the future of a great national asset, representatives of eight provinces attempted to answer a series of vital questions, among them these:

- Will the time come when Canada will face a timber famine, with utilization of wood products rolling up in increasing rapidity and likely to be much faster in the next 10 or 20 years?
- Could better management of forest resources avert this possible danger?
- Can they be developed and managed on a self-sustaining basis to keep Canada in a top position as an exporter of forest products?
- Can yields of the woodlands be increased to meet future needs and keep meeting them in perpetuity; and if so, what should be done and how should it be undertaken?

Most of the answers were encouraging — provided something is done quickly and the public is made aware of the importance of forestry. The public has the biggest stake, for two reasons: because 90% of forest areas are Crown lands administered by provincial governments; and directly and indirectly forests provide the livelihood of over five million Canadians.

Decisions of the conference were recorded in suggestions and recommendations, not by formal resolutions.

The most important was a proposed partnership of industry, public, and federal and provincial government agencies to draft and implement a program of scientific management of forests. No time is to be lost getting it under way.

Summarizing the discussions, W. A. E. Pepler, Montreal, past president of the Canadian Institute of Forestry, said the federal government should be asked to take the lead in providing machinery for the partners to get together, perhaps through committees representing them all, with a permanent secretariat and facilities for setting up technical subcommittees.

The next national forestry conference is planned for next year when, it is hoped, many members of the federal and provincial governments will attend. The four organizations sponsoring the Winnipeg meeting, Canadian Forestry Association, Canadian Chamber of Commerce, Canadian Institute of Forestry, and Engineering Institute of Canada are to organize the conference.

If the federal government accepts the suggestion for bringing the partners together, the general outline the conference had in mind was different groups to deal with different problems. One team of foresters, for instance, would work on problems of forest taxation; another would formulate plans for a national production goal; other teams or committees to discuss forest protection policies, research, and forest management legislation.

Although government, industry and forestry association statements in the past have been essentially in agreement, progress in achievement has been slow, largely because of the maze of legal, financial and political questions, rather than technical problems.

This point mentioned by a number of speakers was stressed by Vancouver lumber magnate H. R. Macmillan. "Everyone agrees," he said, "forestry should be put on a basis of stability and permanence. This meeting, desirable and useful as it may be, isn't good enough. The right people are not here. Let's quit talking to ourselves and do something."

The only one at the Winnipeg meeting who had attended the last national forestry conference at Ottawa in 1906 called by Sir Wilfrid Laurier, Mr. Macmillan's reference was to the small representation of elected members of Parliament and provincial Legislatures, many of whom were among the 1,000 at the Ottawa meeting. Future forestry conferences, he said, had to have a good representation of those responsible for making the laws.

Move For Fire Fighting

Another development was an announcement by Northern Affairs and Natural Resources Minister Jean Lesage that more federal money will be given the provinces for forest fire control.

He said the federal government "is prepared to enter into agreements with the provinces to give grants-in-aid toward provision of certain capital assets for the purpose of controlling fire hazards."

Keynote speeches were made by Lowell Besley, Montreal, chairman of the Woodlands Research department of the Pulp and Paper Institute of Canada; A. C. Price, Quebec City, chairman of the Canadian Pulp and Paper Association and president of **Price Bros. & Co.**; and M. J. Foley, Vancouver, president of **Powell River Co.** Here are brief excerpts from their speeches:

Mr. Besley — The completely scientifically managed forest is practically non-existent in Canada and the public and its elected representatives in federal and provincial governments must accept a large share of the blame. The scientifically managed forest is not far off if forest industries, governments and the public establish a working partnership.

Leaving out unproductive parts of Canada's forest areas and the portion not now accessible economically, there are 582,000 square miles of accessible productive forests of which about three fifths bear trees large enough to be considered currently merchantable. If all this land were put to work and kept at work growing trees Canada need fear no timber famine.

On the other hand our present forest resources are not limitless and we can't afford to squander them through abuse or neglect.

Public Ignorance

Mr. Price—Many believe that conservation consists in curtailing cutting. The implication of this is that trees should be permitted to grow, mature and die. Mature and over-mature trees should be harvested and immature forests nurtured and protected.

Canadians are unaware that the large commercial forests are managed on a perpetual yield basis and that we have an inadequate knowledge of the content and rate of growth of our forests. People are not aware that all informed estimates reveal that the over-all growth in our forests still exceeds the drain on them. Public ignorance of the forests is unfortunately reflected in political inertia.

Mr. Foley—What has been accomplished in making Canadian agricultural lands more productive, development of new plant varieties, fertilizers, new methods, machines, controls of insects and diseases, has increased their yield. This dynamic approach can be duplicated in the longer cycle crops of forests. The main obstacle to advances in forestry or one of them, is our system of land tenure.

I am convinced we will not call forth the creative energies which over the past 50 years have been so successful in every other line of endeavor until we grow trees as a business. To grow trees as a business means private land tenure and a taxation structure which recognizes the long-term nature of tree farming and the enormous risks involved. Otherwise the individual cannot reap reward of a lifetime of effort in improvement of his forest holdings.

These speeches gave the lead for discussion out of which came suggestions and recommendations for forest policy. These included:

More federal help for conserving and developing forest resources. Government revenue from forests and forest industries was now $200 million a year and government expenditures less than $10 million.

Revision of tax legislation applicable to forestry and its industries. Only in recent years, it was pointed out, have income tax administrators allowed tree planting as a legitimate current cost of operating a forest. Other forestry costs which should be a regular part of the harvesting program are still not deductible.

Overhaul of present forestry legislation.

A campaign to convince the public that the mere cutting of timber is not destroying a national resource, and that with proper management timber cut is replaceable.

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ANNOUNCEMENT

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ANNOUNCEMENT

THE TORONTO-DOMINION BANK APPOINTMENT

T. A. EASTON S. C. COOK G. HEINRICH

The Toronto-Dominion Bank has announced the appointment of T. A. Easton as Assistant General Manager with headquarters in Winnipeg. Mr. Easton is well known in Western Canada having served in various capacities in Winnipeg, Calgary and Vancouver. More recently he has been Manager of the Bank's 8th and 4th Avenue Branch in Calgary.

Mr. S. C. Cook who has been the Bank's Assistant General Manager in Winnipeg since 1946 is retiring at the end of the current year after 45 years of service.

Mr. G. Heinrich, Superintendent, Western division, is also retiring at the end of 1956. He has had 41 years of service with the Bank.

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Wanted: Skilled Help

Drastic Surgery on Industry Cure for Lack of Engineers?

In the present shortage of engineers, is industry making the best possible use of the engineers it has?

K. C. Mackenzie, veteran newspaperman who has been in personnel and industrial relations work for 10 years says "No."

Main obstacles to sensible utilization of engineering potential, he says, are:

- **Failure to recognize the professional man as one who must continue to learn or die professionally;**
- **Failure to recognize that a standard industrial organization does not provide the best working conditions for a professional;**
- **Failure to recognize that the professional must be paid in terms of professional competence;**
- **Too much division of engineering concepts and engineering duties;**
- **Loss of development in the technician category.**

"Correction of these faults would require drastic surgery on our industrial system. It might hurt, but the patient will be a healthier one after the job is finished," says Mr. Mackenzie.

By K. C. MACKENZIE

Small businesses with their great informality of operation seem to get along with the professional engineer very well and use him to the fullest measure of his productivity. But this same professional engineer is the problem child of big business. Perhaps this is because he is an adopted child.

He is not the product of business or the factory and he resists instinctively any effort to re-make him to their specification.

The professional employee is a professional first and an employee second, and in this he is not likely to change. The basic professional consciousness is as true of the young engineer at his drafting board as it is of a physician in industrial medicine or a chaplain in an infantry battalion. Being a professional doesn't mean that he is **better** than a non-professional, morally or intellectually; but it does mean that he is **different**.

However, most big business holds doggedly to the position that "the professional employee is just another employee" and when he fails to act just like another employee dismisses the matter as personal touchiness or professional snobbery. No, I don't suggest we should coddle the engineer; that would create needlessly a new set of even more serious problems among other groups. But I do suggest a real effort should be made to understand him.

The Engineers' Passion

The fundamental fact about the professional which business has yet failed to grasp is that his consuming interest is not dollars or balance sheets, not systems or organizations, not customers or sales.

His passion is (or should be) knowledge. He has been reared in the cult of science—the cult of learning. In the case of the engineer his learning is of the productive, creative type as opposed to the critical, the contemplative or the historical. If his job in industry does not enable him or permit him to learn, or if it does not enable him or permit him to produce or create to at least a small but valid degree, he has not a proper job. He ceases to grow, he withers professionally and eventually is not worth his hire.

And yet there are hundreds—literally hundreds—of engineers in Canada performing by rote, day in and day out, tasks which they mastered years ago and which they now do, if not with their eyes shut, at least with their minds closed tight. Here are thousands of engineering hours available and untapped.

A second fact about the professional is that modern business organization and particularly the hierarchies of rank and status simply don't make sense to the man reared in the professional tradition.

This does not mean that the professional is a rebel against authority, a maverick. He has his own hierarchies and he is swift to bestow deference and acknowledge leadership. But he defers to the men **who know more than he does,** irrespective of title, office carpet or walnut furniture. The authority which he so readily recognizes, as Drucker acutely observes, is the authority of the teacher.

Nor does he scorn organization. He is, to a really notable degree, a team worker and professional collaborations are the rule rather than the exception. A giant team gave us the Salk vaccine; a Canadian team gave us insulin. But the organization which the professional understands and feels at home in is not the quasi-military, status-encrusted pyramid so dear to the chart-makers. It is a loosely knit, informal organization of "cells," each comprising a small group of engineers and probably non-engineers, and devoted to a definite tangible assignment.

And the scientific man also expects that inter-visiting and conference between cells should be accepted as natural, easy and necessary. To him the suggestion "Better ask Davidson in Metallurgy about that," seems infinitely more sensible than a formal memo to his superior who in turn tries to bring the matter to the attention of the nearest man with enough status in his legs to step across the chasm separating them from Metallurgy.

System of Rewards

A third fact about the professional not yet mastered by big business (and now I'm looking hard at my friends in salary administration) is that there must be a better way to reward a good engineer for good engineering services than the presently accepted method of promoting him one step up the hierarchy. This quaint procedure rewards the deserving engineer by giving him more money to do administrative work which he probably detests and many perform very badly.

If this doctrine of salary policy strikes you as novel, you can find further fascination in those situations where engineering work is paid for on the basis of job evaluation. For here the engineer must be earnestly enjoined to do no more and think no more than his job description authorizes; otherwise he is "inflating" his job and imperiling the nicely balanced relationships existing between jobs.

Obviously—and in spite of administrative difficulties—engineers should be paid on a basis more appropriate to their professional outlook and the nature of their work. And happily some large companies are now groping their way—ultra-cautiously, I feel—toward more sensible methods.

The use of the formula "years since graduation" as a partial determinant for salaries, although it puts a dangerous premium on mere time-serving, does avoid some of the follies of promotion into administration. And the classification of engineers into "grades," providing the grades aren't linked too closely to administrative levels, is a very sound starting point.

But senior managers must find the courage to face their organization and salary administration experts and order them to devise a scale of compensation for engineers based upon **professional competence,** unrelated to the administrative pyramid. When that is done it will be possible to pay a top-notch engineer for top-notch engineering, whatever the man's title and irrespective of whether anyone "reports" to him.

These three considerations may be grouped together because they all arise from a bland refusal by business to recognize that the professional worker is a different kind of worker. They also belong together because business can do something about correcting each of them immediately. (I have deliberately avoided reference to any of the minor ways in which business affronts the professional worker and disparages his status—time-clocks, penalties for lateness, doctors' certificates for sickness, and the like. They are pin-pricks made serious only because the whole situation is sensitive.)

Concept of Industry

My fourth and fifth points are of an entirely different order. They spring from the basic character of modern industry itself, which does not readily accommodate the engineering contribution. Frankly I do not know whether industry can or would attempt to make the deep and drastic alterations necessary to perfect the productivity of its engineers.

For this is the age of scientific management and the industrial engineers are calling the tunes. In the last 50 years they have re-written the book on industrial practice and, in so doing, have altered almost every aspect of modern living. They have given us mass production, the assembly line, interchangeability of parts; and these have put cars, refrigerators and a host of other appliances within the reach of almost every home. They have conferred unnumbered blessings on all of us. They have given western civilization its trademark.

But in the process of re-making industry the industrial engineers have profoundly altered the nature of human work. By relentlessly carrying division of labor to its ultimate they have destroyed most "jobs," replacing them with "operations." They have divorced "operating" from, on the one hand, all aspects of calculation, judgment and planning, and, on the other hand, from any concept of purpose or any integration with any subsequent stages of the manufacturing, fabricating or assembling process.

Each "operation" thus stands nakedly alone, without clear relationship to what follows or what has gone before.

These almost miraculously successful factory techniques have found their way in modified form into the engineering departments. Particularly is this the case in those large establishments that must cope with huge and fantastically complex assignments. Here the original engineering concept in its complete form can remain a whole in the minds of only a few men; every other engineer on the project is dealing with something less than an entity—with a component, or a sub-component, or a part of a sub-component, or a part of a part of a sub-component, and so forth.

Thus, by sheer necessity, the overwhelming proportion of engineers in big industry are concerned with only a seemingly isolated fragment of the assignment, a fragment whose place and purpose in the whole is, to them, vague, uncertain and perhaps meaningless.

All this is regrettable but necessary. But it has been the influence of scientific management to push this fragmentation even farther than is necessary—to the final limits, in many cases, in which fragmentation is physically practicable. And it has been scientific management, notably insensitive to human values throughout its whole history, that has persuaded general management that there are no dangers in this process and that no correctives are necessary to offset the dehumanization of the work.

The effect of all this is that most engineers are engaged in work in which they cannot learn and from which they can derive no sense of building or creating. Small wonder they feel trapped and professionally ineffectual. They feel, as many of them have told me, that they are not being used as engineers at all. They are right.

Shortage of Technicians

This brings us to the second reason why professional engineers have cause to look askance at scientific management. For the present shortage of engineers in North America is in considerable measure a shortage of technicians. And there is a shortage of technicians principally because scientific management has eliminated most of the breeding grounds in which technicians are produced.

As already stated, industrial engineering has abolished most "jobs," replacing them with "operations." The work of an "operator" involves little real learning, or understanding or even skill. Because operating teaches nothing, develops no skills, imparts no understanding, operators don't grow into technicians.

For a technician is a man with skills—"skilled in the technicalities of his craft" as the dictionary puts it. He is the man with "know-how." Though the term is applied to everything from international diplomacy to selling real estate today, **know-how** is a term invented to describe precisely the special attributes of the technician. Through skills derived from long and varied experience plus a lively mind, he knows how to get things done, how to get around technical difficulties. He is an enormously valuable citizen of the industrial community; a pity the breed is so rapidly becoming extinct.

And like the whooping crane the breed is indeed becoming extinct, and for the same reason—destruction of native habitat. For where within industry (as opposed to schools) can the embryo technician derive his skills "through long and varied experience"? In Canada, only in the dwindling number of small shops and offices in which true jobs have not yet been sterilized into mere operations, and of course in the new electro-mechanical fields in which development and production are still feeling their way. Small wonder big Canadian firms have had to look to Britain for technicians.

You have noted the long columns of classified ads for draftsmen. Drafting was an attractive career when work at the drafting board could expand into other varied, near-engineering duties. Today, being simply drafting, it has lost its appeal.

We have too few technicians because industry has abolished the means of producing them and the schools can't produce enough. But there is still technician work—lots of it and there will be even more in the future. So we have been driven to the expensive expedient of hiring engineers for technician duties. (Unfortunately, too often we neglect to explain to the engineer at the time of hiring that we want him for duties other than engineering; and when he begins to grumble we feel aggrieved.)

But the greatest loss of all, through our lack of technicians, is that we deprive ourselves of the uniquely rich benefits that seem to flow inevitably from an easy association of engineer and technician working together. Whatever the reason, this combination of the theoretical and the practical, each sharpening the other, each deeply respectful of the other's contribution has demonstrated a thousand times over the truth of the ancient maxim that a whole can well be greater than the sum of its parts. It is to groups like this, wherein the thinking and the doing are fused, that we owe our greatest scientific achievements.

But these groups require technicians and, alas, we no longer cultivate technicians.

New Electronic Typewriter Has New Devices

A new electronic typewriter, recently introduced by **International Business Machines Co.,** has an automatic device for positioning the carriage when tabulating.

Operated by means of lines printed on business forms in electrically conductive ink, the typewriter eliminates the manual tabulating adjustments that have to be made when using different types of forms.

Three other new products were introduced at the same time by IBM. They are:

—A storage medium for use with the 650 medium-size computer. Called the 355 Random Access Memory, it has a capacity for six million digits. Four of these units can be attached to one 650 system.

—A new electronic data processing machine. Called the 305 Random Access Memory Accounting Machine, it has a storage capacity of five million digits, any of which can be reached directly without scanning through intervening records.

—A fully integrated system designed for the automatic collection of production data at the source of manufacturing operations. This is known as the Automatic Production Recording system.

Sears May Buy Dolcis Chain

Rapid expansion of the **Dolcis (Canada) Ltd.** retail shoe chain is considered a likely result of the change of ownership of the U. K. parent company and its Canadian subsidiary.

A bid involving nearly £6 million ($16.8m) has been made in the U. K. by financier Charles Clore's **Sears Holdings for Dolcis Ltd., a 250-store chain with eight retail stores in Ontario and Quebec.**

The Sears group of footwear companies at present controls 1,250 retail shops. The merger with the Dolcis group is to be made through a subsidiary of Sears to be called the **National Shoe Corporation,** which will control all the Sears footwear interests and 20% of the retail footwear trade in the U. K.

F. J. Stratton, chairman of Dolcis Ltd. and president of Dolcis (Canada) Ltd., is to be chairman and managing director of the National Shoe Corporation. The Sears offer, which has to be ratified at a shareholders' meeting next month, is recommended unanimously by Dolcis directors.

Dolcis (Canada) Ltd., formed in 1951, opens its ninth branch here next month. Says vice-president and general manager Reginald Lillyman: "The amalgamation could mean accelerated expansion in Canada and possibly an entry into the U. S."

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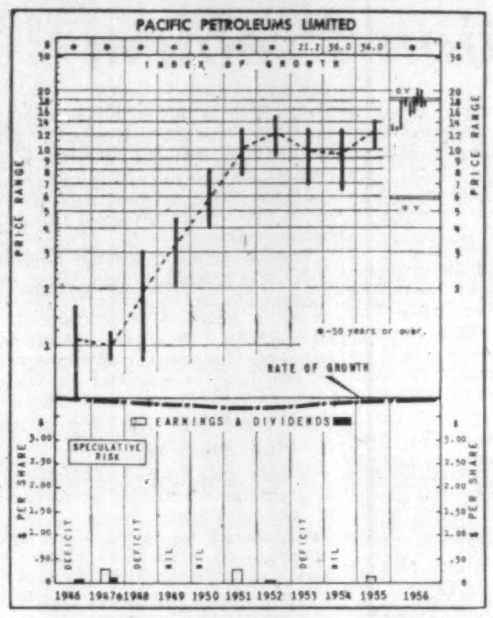
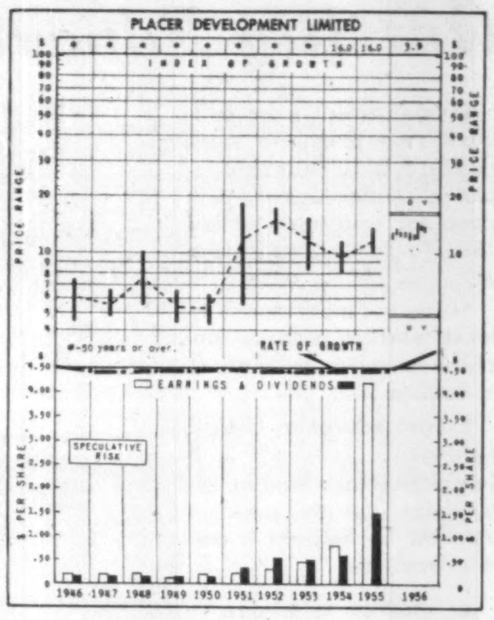
Selected Growth Stocks — Quarterly Review — By NESTOR

The Financial Post's exclusive series of Selected Growth Stocks was chosen by one of the continent's most prominent and successful investment advisers. The reasons for choice shown below the accompanying charts were those given when stocks were chosen in January 1953. Each will be reviewed quarterly. Publication of this series in The Post does not constitute a recommendation to buy these stocks.



PACIFIC PETROLEUMS — Through heavy reinvestment of income in exploration and development of oil and natural gas exported to the United States, Pacific Petroleums appears to offer an eventual high earnings return.



PLACER DEVELOPMENT—Over post-war years, Placer has diversified its investments and eventual substantial increase in earnings is expected from the base metal, tungsten, and oil operations in various areas throughout the world.

Pacific Pete.

Pacific Petroleums Ltd. at recent market price of $16½ is 175% above UV level ($6), and could rise another 9.1% before reaching OV level ($18). No dividends are being paid. After write-offs, earnings were 14c a share for year ended Feb. 28, 1956. Price this year has ranged between high of $20⅜ and low of $12⅛.

A proposal to merge with **Peace River Natural Gas Ltd.**, on the basis of two Pacific shares for each three Peace River shares held was withdrawn 11 days before it was to have been voted on by shareholders Sept. 10.

Reason given was that Pacific had been unable to obtain a ruling from the Bureau of Internal Revenue, Washington, on tax consequences of the proposed share exchange. A current rumor — denied by Pacific officials — has it that the tax angle is to be overlooked and the merger proceeded with. As originally announced, the merger was to have been retroactive to Aug. 1, 1956.

Peace River Natural Gas Co. holds extensive blocks of potential oil and gas acreage in the Peace River area of Alberta and British Columbia. Its chief activity has been participation with the Pacific Petroleums group in exploring these lands, particularly around Fort St. John.

Pacific Petroleums last month acquired an important interest in **X-L Refineries Ltd.,** Dawson Creek, the first British Columbia refinery to process Peace River crude oil.

The refinery at Dawson Creek will operate in conjunction with the $20 million Peace River gas processing plant now being built at Taylor Flats, B.C., by Pacific and **Westcoast Transmission Co.**

The 3,000 b/d Dawson Creek refinery will process crude oil recently discovered by Pacific Petroleums and other exploration companies in British Columbia.

Production from the Taylor Flats plant will include sulphur, propane, butane, natural gasoline and other liquid hydrocarbons. Joint operation of the two plants, company states, will mean more efficient production and distribution of products including highest grades of aviation and auto gasoline, diesel oil, kerosene, fuel oil and other products.

How To Read Stock Charts

INDEX OF GROWTH: The rate at which the value of the equity behind the stock is doubling as determined by the growth rate at which it entered the year. A figure of 5.6 for the present year would indicate that at its current growth rate the equity value is doubling every 5.6 years.

PRICE RANGE: The annual high, low and mean price. Monthly ranges for the current year.

UNDERVALUATION AND OVERVALUATION PRICE LEVELS: Shown by the narrow horizontal lines above and below the stock's price range indicating price at which the particular stock is adjudged as underestimating or overestimating its future rate of growth. A stock showing a fast-growth rate will sometimes anticipate growth by two or three years. In this case it may not be so attractive a purchase relatively as some other fast-growing stock that is not anticipating its growth beyond the immediate present. Other factors such as rate of growth and investment quality will also enter into the comparison an investor will want to make.

Without these UV and OV levels, a current quotation of say, 55 or 75 would carry no significance regarding long-range value. The UV/OV levels also permit judgment as between one stock and another. They are not designated points of purchase or sale nor do they attempt to show what will be a stock's bottom or top figure in any given year.

RATE OF GROWTH: the rate as based on Nestor's tests at which the company is showing underlying or long-term growth. This will determine the price trend of the company's common stock over a period of years and in most instances the trend of dividend payments.

•Background and principles behind the selection by Nestor were discussed in a special article in The Financial Post., Jan. 10, 1953. A limited number of reprints are available on request.

Placer

Placer Development Ltd., trading recently at $13, is 160% above UV level ($5) and has room for a 23% increase before reaching OV level ($16). Price is 3.29 times 1955-56 earnings of $4.24 per share on new common, and yield at indicated dividend rate of $1 is 7.6%. So far this year, price of the stock has ranged from a low of $12 to a high of $15.

Company's net profit for year ended April 30, 1956 was $10.9 million or $4.24 a share, up substantially from $2 million or 79c a share a year earlier. Increase is due largely to special dividends from **Canadian Exploration Ltd.,** a wholly owned subsidiary. The distributions were made to eliminate an earned surplus which might have been classed as "designated surplus" under tax regulations.

Dividend payments from Canadian Exploration in the last fiscal year totaled $9,444,000 as against $629,600 in 1945-55.

Canadian Exploration's net profit for first half of current fiscal year was estimated at just over $1 million. Operations in the second half of the year so far indicate equally good results and it is estimated company's net profit for the full year will be in the vicinity of $2 million.

Lead-zinc production, with 287,414 dry tons milled in the nine months ended May 31 was up slightly over 282,886 tons milled in the corresponding period last year.

Production of lead concentrates for the period at 5,249 tons was down from 7,489 tons in the corresponding period last year, while production of zinc concentrates at 19,313 tons edged almost 2,000 tons higher. Total marketable units of tungsten produced during the period are estimated at 88,078 as against 71,349 in the first nine months of the previous fiscal year.

Bulolo Gold Dredging Ltd. (in which Placer Development holds 125,000 of one million issued shares) reports value of gold and silver recovered in the first nine months of its fiscal year (ended Feb. 29) at $1,015,770, down from $1,597,980 in the corresponding period of 1954-55.

Asnazu Gold Dredging Ltd. (in which Placer owns 615,000 of 1.5 million issued shares) net profit for 1955 was $42,671 after providing for depreciation, depletion, bonuses and pensions. Company's No. 1 dredge was expected to have exhausted its gravel reserves by August or September of this year after which the company was scheduled to go into voluntary liquidation.

American Exploration & Mining Co., a wholly owned subsidiary, last year investigated a number of mining properties in Nevada, California, Arizona and Alaska. In Arizona, company together with another firm is conducting exploration by airborne geophysical methods. Various other areas are currently under examination and an active program is being carried out, company reports.

Working capital of Placer Development as at April 30 was $10.3 million as against $3.2 million a year earlier. In February of this year, company's common stock was split three-for-one.

Business Courses Attract Thousands

18,000 Students To Enroll In U. of T. Extension Courses

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New courses on subjects of importance to the businessman in a technological age bring the number of 1956-57 Business and Industry Courses offered by the University of Toronto Extension up to 37. Among the new courses are:

Nuclear Physics and Reactor Theory for Engineers. Open to graduate engineers whose formal instruction has not included the basic physics and reactor theory required by an engineer in the atomic energy industry. Twenty lectures, Wednesday evenings at 8, beginning October 3.

The Customs and Excise Tariffs of Canada. Designed to give the layman an understanding of the tariff and to assist importers and exporters to obtain a wider knowledge of customs regulations. Twenty lectures, Monday evenings at 7.30 starting October 1.

Municipal Government. Of interest to those who "just want to know about the subject" — and, of course, to those planning to enter municipal politics. Ten lectures, Wednesday evening at 8, to commence October 3.

Marketing. To provide a knowledge of basic marketing principles and to develop an individual's ability to analyse marketing problems. Sixteen sessions, Thursday evenings at 7.30, beginning October 18.

Functions of Methods Engineering. Designed to explain to those not directly engaged in time and motion study, the purpose and application of methods engineering. Sixteen sessions, Wednesday evenings at 8, beginning October 17.

Office Management. To outline the functions and place of the office manager in modern business. Sixteen lectures, Tuesday and Thursday evenings at 8 (two classes will be conducted concurrently), to get under way October 16 and 18.

Economics & Urbanization. Designed for anyone concerned with real property values and property management. Twenty lectures, Tuesday evenings at 7.30, beginning October 2.

Besides offering new courses, the University Extension has modified a number of courses offered in earlier years and limited enrolment to present a broader management appeal. Among the courses in this category are:

Accounting. Intended for those who wish to broaden their knowledge of the function of accounting. Twenty sessions, Monday evenings at 7.30, beginning October 1.

Business Law. Aimed at counseling the average businessman — informative and not a substitute for legal advice. Twenty sessions, Thursday evening at 8, starting October 4.

Cost Analysis and Financial Control. Designed to present an understanding of the management function relative to the principles of industrial accounting. Twenty lectures, Wednesday evening at 8, commencing October 3.

Industrial Management. Designed for those in industry who are preparing to accept additional responsibilities for business operation. Twenty lectures, Monday evenings at 8, beginning October 1.

Electrical Techniques for Digital Computers. Intended for engineers interested in the design and structure of equipment using computing techniques. Possibly 20 lectures (depending on interest), Thursday evenings at 7.30, to get under way October 4.

High Speed Processing. To provide general background on the use of stored program electronic data processors in business problems; no special knowledge of mathematics or electronics necessary. Twenty lectures, Thursday evenings at 7.30, starting October 4.

Programming for Digital Computers. A laboratory course on programming and coding for high speed processing systems. Thursday evenings at 7.30.

Other courses offered by the University Extension:

Accident Prevention for Industry. Nine lectures, Monday evenings at 7.30; started September 24.

Advertising. Twenty-two lectures, Thursday evenings at 7.30, beginning October 4.

Appraisal of Real Estate I. Twenty lectures, Thursdays, 8 p.m., October 4.

Appraisal of Real Estate II. Twenty seminars, Mondays 8 p.m., October 1.

Business Communications, Oral. Ten periods, Wednesdays 8 p.m, October 3.

Business Communications, Written. Ten periods, Wednesdays, 8 p.m., October 3.

Chemical Mathematics. Twenty lectures, Wednesdays 8 p.m., October 3.

Construction Management. Ten lectures, Tuesdays, 8 p.m., October 2.

Elements of Economics. Sixteen sessions, Mondays, 7.30 p.m., October 15.

How to Invest Your Money in Securities. Eleven lectures, Wednesdays, 8 p.m., October 3.

Industrial and Business Administration. Sixteen sessions, Tuesdays, 8 p.m., October 16.

Industrial Management. First of four parts of course for certificate in industrial management to be conferred by the Canadian Industrial Management Association. Twenty-two two-hour lecture-discussion periods, Mondays, 7.30 p.m., October 1.

Internal Auditing. Twenty lectures, Tuesdays, 7.30 p.m., October 16.

Personnel Administration — Introduction. Sixteen sessions, Wednesdays, 8 p.m., October 17.

Personnel Administration—Human Relations. Sixteen sessions, Thursdays, 8 p.m., October 18.

Personnel Administration — Labor Relations. Sixteen sessions, Thursdays, 8 p.m., October 18.

Physical Metallurgy. Ten lectures, Tuesdays, 7:30 p.m., October 2.

Public Administration I, II & III. I & II, 20 sessions each; III, 12 sessions. Wednesday afternoons beginning October 3.

Quality Control Through Statistical Methods. Twenty lectures, Mondays, 7.30 p.m., October 1.

Salesmanship. Ten lectures, Monday evenings at 7.30; started September 24.

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Public Awareness Can Lick Our Big Education Problem

Canada needs more educated men and men more educated. It's a must for continuing technological progress, for enjoyment of leisure. To do this, we'll have to:

- **Lay out more money to boost teachers' salaries, establish bursaries, build needed facilities.**
- **Give education 'moral' backing.**

Here's the way a leading industrialist sees the problem and how he believes it can be solved:

By TREVOR F. MOORE
Vice-President, Imperial Oil Ltd.

One thing certain for the future of this country is the need for a continuing supply of good brains, in education, in government, and in business.

If you look at the problems of free enterprise, you inevitably realize that the hopes of the future rest on the development of a more highly educated, and perhaps a more objectively-minded community than we have today.

And when you ponder the operating aspects of business, the new human and productive relationships implied in such terms as "automation," you realize that here, too, the trend of development is calling for higher and higher degrees of education, not merely in the technical side of things, but in the understanding of human nature and in the ability to think logically and constructively.

When you consider the problems that have developed with the great increases in leisure, the importance of education is again underscored. In all previous periods of history there has been a leisured class. Today, for the first time, there is a "leisured mass." The short week and the high purchasing power of the average Canadian has given him a degree of leisure time and the wherewithal to enjoy it that were formerly the lot of the fortunate few. It seems clear that education has a tremendous job to do in preparing people to enjoy this increasing degree of leisure.

There is also the problem of complex political developments and the increasing demands that are being placed on men in public affairs and on the voters who elect them. There is scarcely an issue today that does not make intensive demands on the knowledge and understanding of those who have to reach decisions.

It would be laboring the point to enumerate the many areas in which the problems of modern society can only be solved if we have more educated men and men who are more educated.

Support from Business

If we were to write a manifesto for business today, or indeed for any other major group that feels it has a long-term stake in the community, the first chapter would almost certainly be dedicated to the support of education.

TREVOR F. MOORE

People have sought the solution of human problems through communism, capitalism, teetotalism, socialism, euphemism and egotism. They have tried aristocracy, democracy, plutocracy, and even technocracy. But I do not think anyone has found any process more productive of human development and progress than education.

Education in Canada needs support and needs it badly. The problems need to be openly discussed so that everyone is aware of them.

It needs financial support. It needs some $5 million or more to bring the pay of university professors within reasonable reach of what they might have been earning had they not chosen to serve in educational institutions. It needs perhaps ten times that amount to provide bursaries for students who have the intellectual but not the financial means for going on to higher education. It needs many more buildings. The sums required are substantial, but they are well within Canada's capacity to pay.

More than financial aid, education needs moral support. If it has moral support, the monetary support will not be far behind. By moral support, I mean **considerably more** than mere respect for education as an institution.

What Kind of Education?

One thing we need to give to education is a reasonably clear mandate. For years the battle between progressive and traditional education, between the "child-centred" and the "mind-centred" school, between vocational training and the intellectual disciplines has been raging with comparatively little participation by the general public. Surely it's time that we voters studied the evidence and reached a conclusion on these basic issues which would at least give the educational fraternity some clear notion of what we expect of them.

The solution of the educational problem is going to call for more maturity on the part of voters. I can perhaps illustrate what I mean by an example. Recently, in a national magazine, the Dean of the College of Education at the University of British Columbia suggested that school children would all make better progress if they were divided into three streams, the fast-learning, medium-learning and slow-learning streams.

Obviously, the parents of children in the fast-learning stream would not object to such a system. Those in the medium-learning stream might not object too strenuously, but the parents of youngsters who were directed into the slow-learning stream would probably find the decision most unflattering.

Regardless of its educational merit, this proposal would call for a great measure of emotional maturity in order to be introduced successfully. This sort of emotional maturity, or moral courage if you like, is essential to the ultimate solution of the educational problem.

How Much to Spend?

A great many of our educational problems are simply a matter of making up our minds. How much should we spend — as a nation — on education? Out of each million dollars of national income, should we spend nearly two cents per Canadian child on education — as we did in depressed 1931? Or should we spend less than half that amount as we did in prosperous 1953 and probably do today? How much are we prepared to give to the needs of Johnny's school — more and better equipped classrooms, more teachers? Is it more important that Johnny have a swimming pool or that his teacher be adequately paid and adequately respected? Is that why, as some say, we have too few "Mr. Chips" today?

The teaching profession — public school, high school and university — constitutes the foundation for the future of any country. And today in Canada, this profession is working against great odds and under considerable handicap.

The educational problem is every citizen's personal responsibility and as such we should use our own influence and the influence of our associations.

1. to publicize the problem;
2. to urge our governments to tackle the matter aggressively.

I think the old and somewhat worn phrase, "an aroused public opinion" best describes the first and basic requirement. The man on the street doesn't really know that there is an educational problem except perhaps, crowded schools. And here, he will often vote against an addition to the local school because of increased taxes.

He is the one to convince that we require more, far more and better teachers, that the teachers' prestige should be restored, that the teaching profession should rank on the top level of all professions. And it is essential that the taxpayer, the man on the street, you and I, recognize these things and then our representatives will do something about it.

New Alkylate Plant Contract Let By Imperial

Imperial Oil has awarded a contract to the **Fluor Corp. of Canada** for construction of a new detergent alkylate plant. Work will start this fall on the site which adjoins company's Sarnia refinery. Plant is expected to be completed by middle of next year.

The plant will have a yearly capacity of 30 million lb. of detergent alkylate (dodecyl benzene). This could make Canada self-sufficient in this chemical, replacing $2½ million of annual imports by 1958. More than 80% of the chemical will be used as a cleaning agent in familiar household detergents. Additional amounts will go into industrial synthetic detergents.

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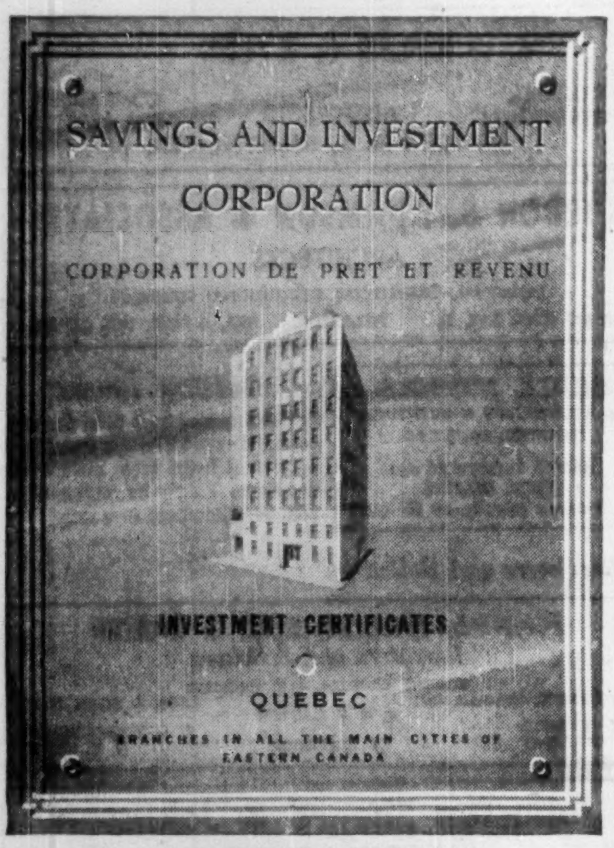

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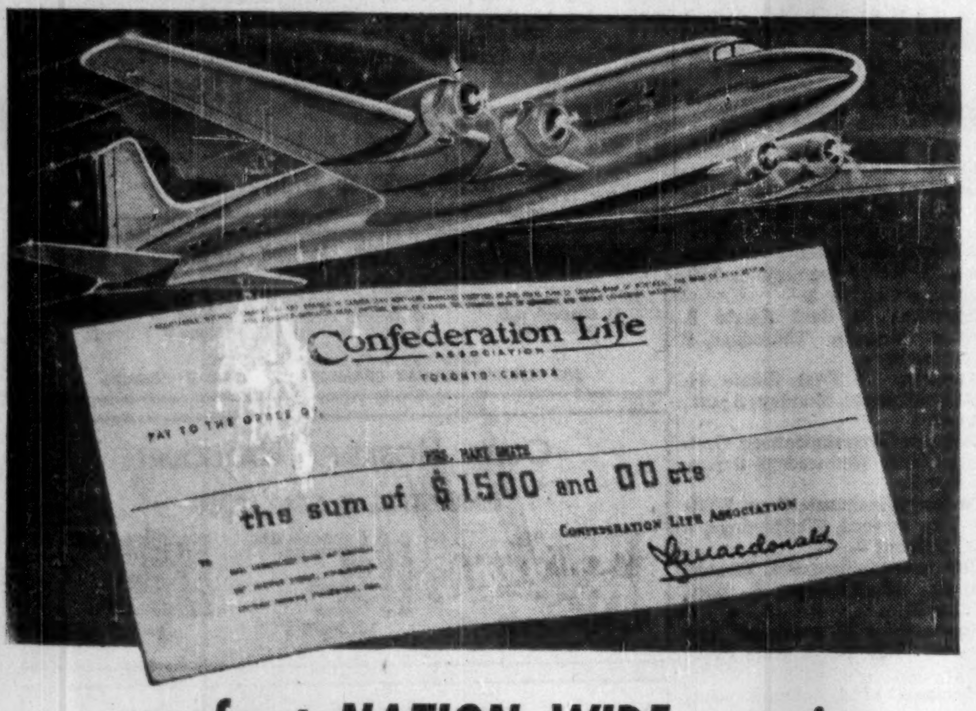

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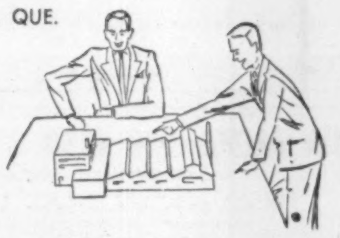

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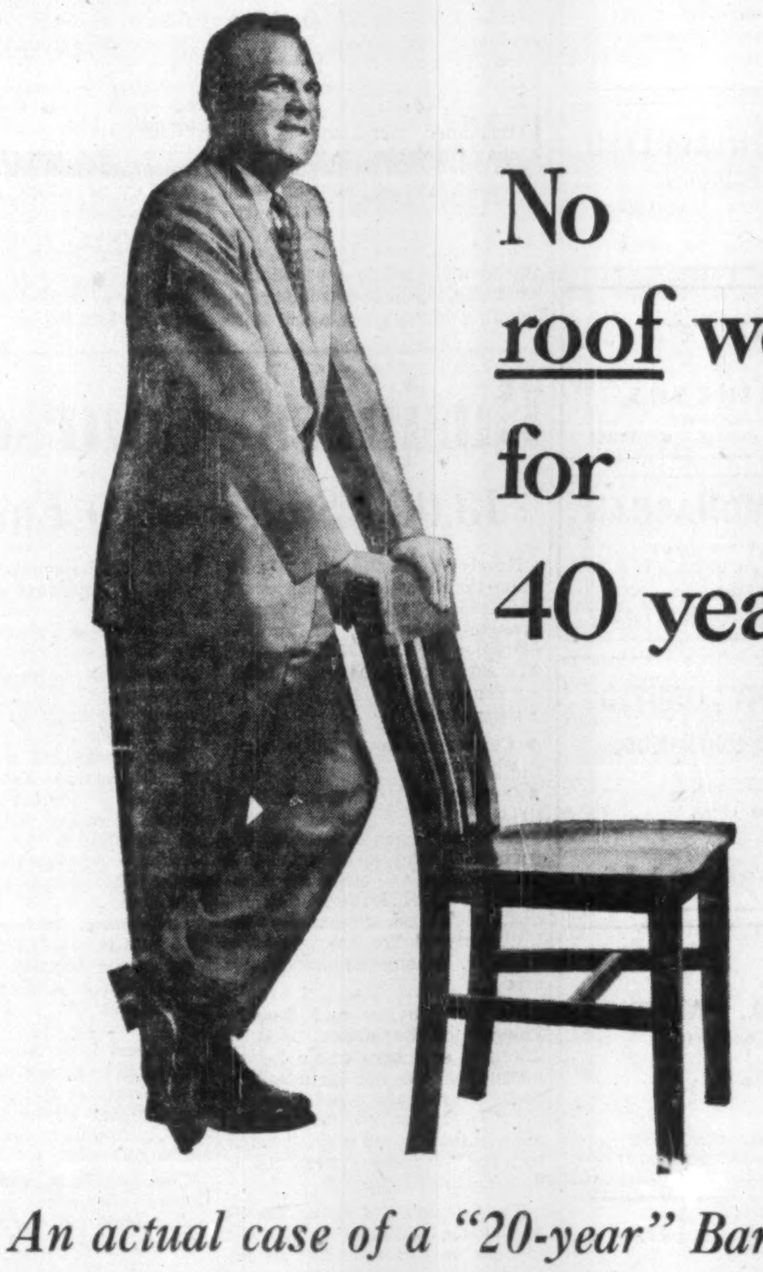

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TWO TRACTORS, hitched in tandem, pull a plow to break soil on Hardee Farms land. Tough roots so interlace the fibrous black soil that one tractor can't pull the plow alone. General Manager N. D. Young looks on.

Find Millions in the Marsh, By 'Industrialized' Farming

By ERIC RICHTER

A multi-million-dollar, 100-million-lb.-per-year fresh vegetable "factory" and farm—believed to be the largest operation of its type in Canada—is rising in the Sherrington-Napierville area of Quebec's Eastern townships.

This fresh vegetable giant is **Hardee Farms Ltd.**, whose various lines of plastic-packaged fresh vegetables have already become familiar items in the shopping basket of many a Montreal area housewife. Though only two years old, the firm already has 300 acres under cultivation and capacity of its packaging factory is 75,000 consumer packs per day.

Within the next two or three years, when the present building program is completed, Hardee Farms expects to have:

—About 2,000 acres of land under cultivation and in production of such vegetables as carrots, onions, potatoes, asparagus, spinach.

—Increased the capacity of its vegetable packaging factory to between 125,000 and 150,000 consumer packs per day.

—Humidity and temperature controlled vegetable storage facilities with a capacity of 7.5 million lb. of vegetables.

—A 20-unit housing development for key employees well under way.

—Entered the frozen foods field.

There are two main economic keys to this ambitious undertaking. They are the application of mass production techniques and a high degree of mechanization to both growing and packaging operations and the "black muck" or reclaimed marshland on which the vegetables themselves are grown.

Recent changes in consumer preference and a change in marketing techniques is what has really put Hardee Farms in business of such a vast scale. Today' housewife wants to buy potatoes that are already washed and spinach that has been desanded (pot-ready as it's referred to in the trade) while the supermarket operator wants attractive preweighed vegetables put up in transparent packs.

Borrowing a leaf from the automobile industry's history book, Harde Farms concludes that through use of automatic cleaning machinery and assembly line weighing and packaging, the cost of produce packing can be reduced.

A. ("BRAM") DEES
President,
Hardee Farms Ltd.

15%-20% Less Cost

Specifically, the firm estimates it can clean and package produce at anywhere from 15% to 20% less cost than can the supermarket or the vegetable wholesaler.

Establishment of the company's own vegetable plantations — in itself a money-making proposition —will also provide stability in both the quality and availability of raw materials which are used in the packaging operation. When all its land is under cultivation, the company expects to grow about 25% of total produce to be handled by the factory. The balance will be purchased locally, elsewhere in Quebec or brought in from adjacent provinces and the United States.

The various farms that make up Hardee Farms' plantation are located on pockets of reclaimed marshland. In its original state, the land was boggy, covered largely by fire weed and brush. Local residents found it too poor for raising crops and too soft for grazing cattle.

Yet this soil, drained and treated, is ideally suited to the production of many types of vegetables. It is very similar to the Holland Marsh in the Toronto area.

Hardee Farms officials believe, however, their "black muck" land is far superior to that found at Holland Marsh. The "muck" or peaty, fibrous soil has an average depth of some 20 ft. in the Sherrington-Napierville area, more than twice the depth of the "muck" at Holland Marsh.

To reclaim the land, the company has constructed a vast system of drainage ditches. After excess water has been removed, the soil is plowed and large quantities of lime plowed under. This is to correct the great acidity of the soil.

The result is a highly unusual type of farm.

The soil itself is of fine, wood-like composition. It does not become muddy when wet and dries out quickly after a rain storm. In fact, the company can send workers out into the field a few hours after a heavy rain. When heavy equipment moves over the fields, the ground shakes over a considerable area. The sensation of walking over the cultivated black muck is not unlike walking over a foam rubber floor mat.

While this type of soil has many advantages, it's not without drawbacks. Fire is a great hazard with the result that smoking in the fields is prohibited. A carelessly dropped cigarette could set the ground itself on fire. Because of deep smouldering, such blazes are extremely difficult to extinguish.

In building access roads, the company also ran into problems. Gravel placed on top of the soil simply keeps sinking in. Accordingly large amounts of clay had to be laid down to form a roadbed and gravel placed on top of this foundation.

In the farming operation itself, mechanization is the order of the day. Potato seeding, for example, is carried out by a tractor-towed automatic seeder which plants two rows at one time.

During the growing season, weeding is done by a hydraulic weeder which removes unwanted growth from four rows in one pass. Harvesting is carried out by a self-propelled potato combine which digs out the potatoes as it moves along the rows, picks them up—knocking off most of the earth clinging to them in the process—and deposits the potatoes in field containers on the combine proper.

When full, the containers are transferred to a wagon which moves along beside the combine. The wagon is then driven off to the factory where its load is dumped for cleaning and packaging or storage.

Hardee Farms uses a similar machine—an onion combine—in its onion fields. Still more versatile, this machine in addition to performing all the tasks of the potato combine, lops the tops off the onions and sorts the onions themselves into three different sizes. Still other machines are employed to pull, top and pick up other root crops such as carrots and beets.

Some of the mechanical harvesting equipment is custom built and many machines are modifications of standard production models. The machines have largely been developed through co-operation between the company and makers of agricultural equipment. Almost all are produced in the United States.

Some indication as to the degree of mechanization can be taken from the fact that when the farming operations are in full swing, the company will be using upward of 60 tractors. In addition, the company plans to purchase either a helicopter or fixed-wing aircraft next year. The aircraft will be used both for aerial spraying and for ferrying officials from one farm to another. The company's chief farm at Napierville is about 15 miles away from the "factory" at Sherrington.

In its vegetable "factory" or packaging operation, Hardee Farms employs automatic machinery and mass production techniques wherever possible.

Take the case of the lowly potato, for example.

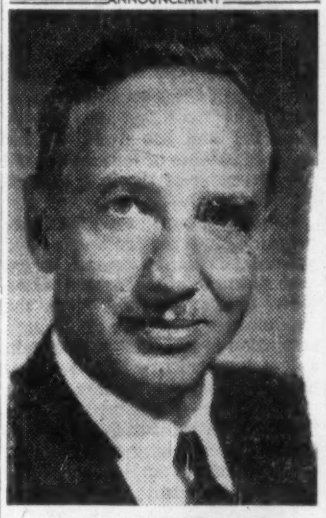
Brought in from the fields, the potatoes are dumped in the hopper of an over-60-ft.-long machine which will grade, clean and dry them. From the hopper, the spuds are taken, escalator fashion, to a sorting screen and in the process much of the earth clinging to them is knocked off. From sorting screen they are dumped into a wash bath from where they are passed under high-pressure water jets to remove any remaining earth and dirt. From the jets they travel through a disinfecting bath and move into a forced-air infrared heated drying tunnel, through which they roll end over end on concentric rollers.

Emerging from the tunnel completely dried, the potatoes are dumped onto a conveyor system which keeps them circulating among groups of girls who tend the packaging assembly line.

One girl picks the potatoes off the conveyor and places them in the scoop of a set of scales. Her partner, stationed by the scales on the other side of the conveyor,

(Continued on page 36)

ANNOUNCEMENT



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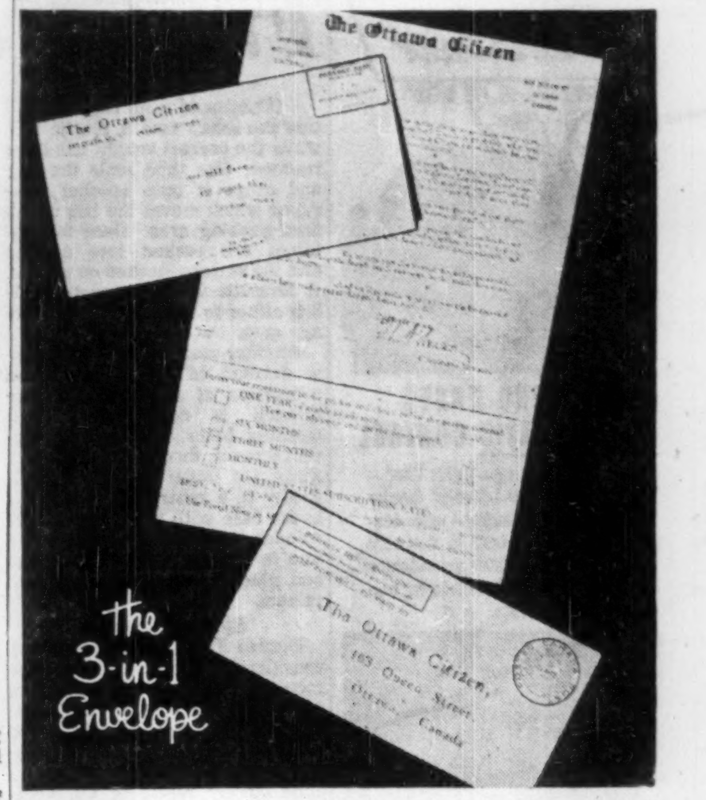

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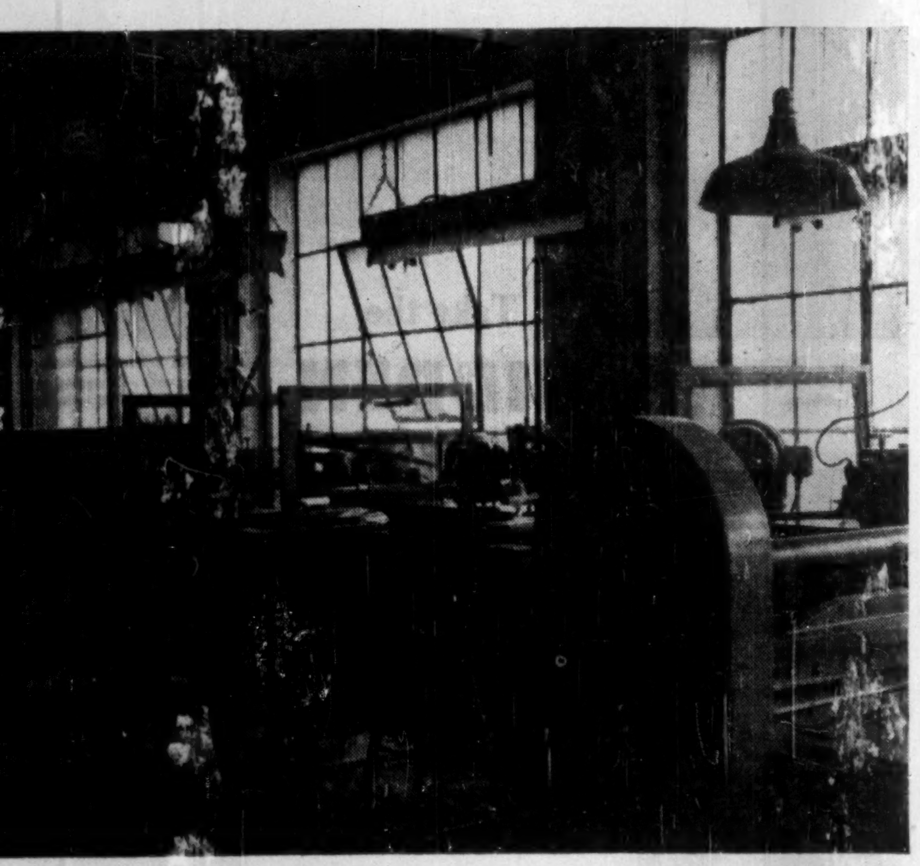

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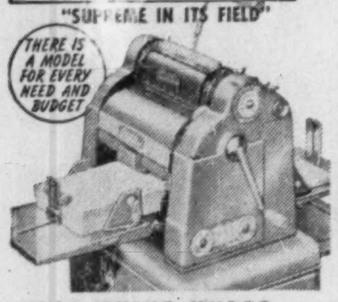

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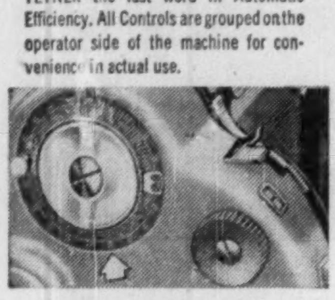

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Find Millions in Marsh

(Continued from page 35)

tips the scoop into a plastic bag when the correct weight has been reached. She then seals the bag and drops it onto another conveyor which moves the bag to the final packing area. Here the potatoes are packed into cartons and the cartons stacked on pallets. A fork lift truck moves the pallets either to the shipping or storage area.

Another machine at the factory is devoted to the cleaning and processing of spinach. In it the spinach is conveyed through washing baths, over two inspection screens, through an ice water spray (to impart crispness) and finally to a centrifugal drier. As is the case with the potatoes, the spinach then goes to a packaging line to be weighed out, packaged and placed in iced shipping containers.

Storage Facilities

Hardee Farms is also devoting considerable attention to storage facilities. Through temperature and humidity control, the company in January expects to be able to offer housewives vegetables which in taste and appearance closely resemble the field-fresh product sold in the summer.

A number of inter-connected warehouses have already been built and further construction is planned. When the current program is completed, warehouse capacity will be about 7.5 million lb.

The warehouses depend on nature (assisted by powerful fans) rather than mechanical refrigeration. The buildings are heavily insulated and are fitted with a series of hatches or louvres around the perimeter of the base of each building.

At night when the temperature drops, the hatches are opened and powerful exhaust fans suck in the cool autumn air. Toward dawn when the temperature rises, the hatches are closed. The building's insulation is sufficient to maintain a low temperature in the warehouse throughout the day.

Ventilation is achieved by storing the vegetables in field boxes—slatted, interlocking crates about the size of an apple box. This system also permits more efficient use of storage facilities. As the crates themselves bear the weight of other crates stacked on top of them, these boxes can be stacked up to the ceiling.

In conjunction with the warehouse program, a rail spur is now in the process of construction, as is a tractor-trailer dock.

Hardee Farms is the brainchild of A. "Bram" Dees, a well-known figure in the Canadian food industry. As well as being the president of this venture, he is also president of York Farms Ltd. and is a director of Shirriff-Horsey Corp.

Small Truck Farm

Dutch by birth, Mr. Dees immigrated to Western Canada in the 1920s and established a small truck farm near Winnipeg. During the intervening years he parlayed this farm into the present 2,000-acre venture and in the process has risen to the top ranks of Canada's food industry.

Establishment of Hardee Farms proved an economic boom for the Sherrington and Napierville area. Sherrington, where the "factory" is located, previously had no industry and most of its residents engaged in marginal farming operations.

Napierville, already the site of several small industries, is the scene of the company's principal farm, a welcome addition from an employment point of view.

At present, the company estimates that its wages and local purchases have added a total of about $1 million annually to the economies of these two communities and their immediate area. This figure will probably increase to four or five million over the next few years, the company estimates.

The Hardee Farms see a very bright future as far as the market for its products is concerned. In the first place, the entire operation is located only 35 miles from the largest potential market (populationwise) in Canada. It is also within easy reach of a score of larger centres in Quebec and Ontario and there is the possibility of export to the U.S.

The company's revolutionary farming and packaging techniques have already attracted the attention of growers and packers elsewhere in Canada and abroad. Indeed, Hardee Farms frequently is host to many visitors who call by to see for themselves how the industrialization of the vegetable business is accomplished.

INSPECTING the onion crop at Hardee Farms: General Manager N. D. Young (left) and President A. "Bram" Dees. The 110-acre field contains more than 4.5 million lb. of onions. The onions have been pulled out of the earth and left in the sun to dry the tops.

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New Microfilming Service Produces Print in 3 Sec.

A new microfilm printing service which makes black-and-white enlargements from positive or negative roll microfilm at the rate of 20 ft. a minute—a finished print every three seconds—has been inaugurated in Toronto.

The service, offered by **Preston Microfilming Services,** involves the new Xerox Copy-Flo continuous printer, distributed by the **Haloid Co. of Canada.**

The advantage of the new continuous printer is its low-cost, high-capacity printing from either 16mm or 35mm microfilm, perforated or non-perforated.

Maximum width of the prints the machine produces is 11 in. There is no minimum width, but sizes less than 4½ inches are too small for practical use.

Enlargements from microfilm frames range from seven to 24 diameters in size, in steps of 7, 7½, 8½, 9, 9½, 11, 12, 13, 14, 15, 17, 19, 22 and 24 times the film size.

Limitless Uses

The uses of the new process are almost limitless, it is claimed.

A complete series of clear engineering, architectural, mining or construction original drawings could be microfilmed for future small-space storage and innumerable copies run off for use, each frame enlarged to 11 in. x 17½ in., in a matter of minutes.

Other reproductions might include birth and death certificates, contracts, patents, correspondence for legal purposes, library cards, seismic charts, text books, cable records for telephone companies, abstracts of titles, engineering forms, draughtsman's detail drawings, bank drafts, servicemen's discharge certificates, insurance policies, mortgage cards, statistical tabulations for government or industrial records.

Savings in the shipping of tiny microfilm or small-size black-and-white reproductions over bulky blueprints could be impressive.

Important, too, is the ability of the machine to reproduce continuously any needed records of industries and businesses whose original records have been destroyed by fire, flood or other catastrophe.

Microfilm can be processed and prints shipped within 48 hours of their receipt, according to O. Dunsford, manager of Preston Microfilming Services.

In many cases they can go out in 24 hours. Jobs involving as many as 5,000 prints can be handled in three or four days.

When microfilm is received, the Preston company inspects it over a light box to make sure it will reproduce satisfactorily. Clarity of the filmed image is important.

The film is measured to find out how much paper it will need, for billing is on the basis of the lineal foot. Costs are less than 10c ft.

The image density is read on the densitometer and the film is cleaned of all surface dirt and lint.

Finally, the film is threaded on the enlarging head of the Copy-Flo printer, paper of proper size and weight is placed on the machine, and the run is made, producing enlargements which are dry and smudge-proof.

Afterward the roll of xerographic prints is removed from the spindle outside the machine and cut into individual prints for shipping.

ANNOUNCEMENT

CLOSE BROTHERS LTD.

A. J. SHEPLEY

The Directors of Close Brothers Ltd. of London, England, are pleased to announce the appointment of Mr. A. J. Shepley as Investment and Trustee Manager of their Toronto office on his transfer from Barclays Trust Company of Canada on 1st October next. Mr. Shepley is well known in financial circles, having been associated with Barclays for over twenty years.

B. C. Airlines Change Hands

VANCOUVER — Two Vancouver men, F. Maurice McGregor and Paul Tak, have purchased the 12-year-old, 24-plane **B. C. Airlines Ltd.** for an undisclosed price and will move its operations headquarters from Victoria to Vancouver.

McGregor, who organized **Trans-Canada Airlines** overseas services, and Tak, a Dutch financier who came to Canada 10 years ago, purchased the province's second largest non-scheduled airline from William Sylvester, its founder.

What Your Dollar Is Worth In Foreign Currency

Here's a handy list of what your dollar is worth in various currencies of the world. These foreign exchange rates, compiled by Deak and Co., Inc., were those prevailing on Sept. 14.

		Bid	Asked
EUROPE			
Austria	100 Schillings	$3.80	$3.90
Belgium	100 Francs	1.97	2.02
Denmark	100 Kroner	14.00	14.45
England	1 Pound	2.59	2.64
Resident	1 Pound	2.61	2.66
Transferable	1 Pound	2.74	2.77
Finland	1,000 Marks	2.65	3.—
France	1,000 Francs	2.40	2.45
Germany	100 Deutsche Marks	23.50	23.70
German East	100 East Marks	6.10	6.50
Hungary	100 Forint	2.35	2.95
Italy	1,000 Lire	1.58	1.605
Netherlands	100 Guilders	25.50	26.—
Norway	100 Kroner	12.65	13.50
Portugal	100 Escudos	3.38	3.48
Spain	100 Pesetas	2.15	2.25
Sweden	100 Kroner	18.65	19.35
Switzerland	100 Francs	23.25	23.35
Yugoslavia	1,000 Dinars	1.30	1.90
AFRICA-ASIA			
Australia	1 Pound	2.02	2.08
Burma	100 Kayats	7.10	8.60
Ceylon	100 Rupees	15.50	17.50
Egypt	1 Pound	2.15	2.40
India	100 Rupees	19.—	20.—
Japan	1,000 Yen	2.30	2.45
New Zealand	1 Pound	2.35	2.45
Pakistan	100 Rupees	12.—	15.—
Philippine	100 Pesos	31.—	33.—
WESTERN HEMISPHERE			
Argentina	100 Pesos	3.15	3.35
Bolivia	1,000 Bolivianos	0.096	0.098
Brazil	100 Cruzeiros	1.36	1.46
British W. I.	100 BWI $	55.—	58.—
Canada	100 Canada $	100.—	102.—
Chile	100 Pesos	—.16	—.20
Colombia	100 Pesos	19.—	22.—
Cuba	100 Pesos	96.—	99.—
Curacao	100 Guilders	47.50	52.50
Ecuador	100 Sucres	4.90	5.20
Dominican R.	100 Pesos	96.—	99.—
El Salvador	100 Colones	35.—	39.—
Honduras	100 Lempiras	45.—	49.—
Jamaica	1 Pound	2.40	2.60
Peru	100 Soles	5.—	5.30
Uruguay	100 Pesos	23.—	25.—
Venezuela	100 Bolivars	29.25	29.75

Bank Staff Changes

Royal:

D. J. MORRIS, manager, North Clearbrook, B.C., to be manager, Burns Lake, B.C.

J. H. ERLENDSON, manager, Burns Lake, B.C., to be manager, Penticton, B.C.

M. R. DINNEY, manager, Penticton, B.C., to be manager, Nanaimo, B.C.

J. M. GRIER, Vancouver, to be manager, Colwood, B.C.

F. W. SUTTON, accountant, Melita, Man., to be acting manager, Churchill, Man.

D. D. LEDGLEY, accountant, Wheatley, Ont., to be accountant, Rexdale, Ont.

W. R. PENNER, Douglas St., Victoria, to be accountant, Ladner, B.C.

A. E. DAVIDSON, Decarie & Van Horne, Montreal, to be accountant, Norgate, St. Laurent, Que.

R. A. RIDDELL, Sargent & Sherbrook, Winnipeg, to be accountant, Melita, Man.

A. J. HILL, Spadina & College, Toronto, to be accountant, Lindsay, Ont.

I. L. MacLEOD, Commercial Drive & Graveley, Vancouver, to be accountant, Georgia & Burrard, Vancouver.

NOTICE OF REGISTRY

Notice is hereby given that the Zurich Insurance Company has received certificate of registry no. 1847 authorizing it to transact in Canada the business of "Machinery Insurance" in addition to the classes for which it is already registered.

J. H. BURGAR,
Chief Agent for Canada.

FOREIGN INSURANCE COMPANIES ACT
INDIVIDUAL UNDERWRITERS

Notice is hereby given that Certificate of Registry No. C 1848 has been issued as at 21st August, 1956, by the Department of Insurance, Ottawa, to Individual Underwriters (New York City, U. S. A.), authorising it to transact in Canada the business of Explosion, Machinery, Plate Glass, Real Property and Theft Insurance and, in addition thereto, Earthquake, Water Damage and Weather Insurance, limited to the insurance of the same property as is insured under a policy of fire insurance of the exchange, in addition to the classes for which it is already registered.

LESLIE PHILLIPS,
Chief Agent for Canada.

NOTICE

NOTICE is hereby given that the Northwestern National Insurance Company of Milwaukee, Wisconsin, has been granted by the Dominion Insurance Department, Certificate of Registry No. C 1841 authorizing the Company to transact in Canada the business of: Fire Insurance, Accident Insurance, Automobile Insurance, Boiler Insurance, excluding Machinery Insurance, Explosion Insurance, Inland Transportation Insurance, Personal Property Insurance, Plate Glass Insurance, Real Property Insurance, Sprinkler Leakage Insurance, Theft Insurance, Windstorm Insurance and, in addition thereto, Earthquake Insurance, Falling Aircraft Insurance, Hail Insurance, Impact by Vehicles Insurance, Water Damage Insurance and Weather Insurance, limited to the insurance of the same property as is insured under a policy of fire insurance of the company.

R. H. L. MASSIE,
Chief Agent in Canada.

NOTICE

"Certificate of Registry No. C1849 has been issued by the Dominion Insurance Department to the Security Insurance Co. of New Haven authorizing it to transact in Canada the business of Fire Insurance, Accident Insurance, Automobile Insurance, Boiler Insurance, excluding Machinery Insurance, Explosion Insurance, Hail Insurance, Inland Transportation Insurance, Personal Property Insurance, Plate Glass Insurance, Real Property Insurance, Sprinkler Leakage Insurance, Theft Insurance, Windstorm Insurance and, in addition thereto, Earthquake Insurance, Falling Aircraft Insurance, Impact by Vehicles Insurance, Water Damage Insurance and Weather Insurance, limited to the insurance of the same property as is insured under a policy of fire insurance of the Company."

JOHN J. KILGOUR,
Chief Agent.

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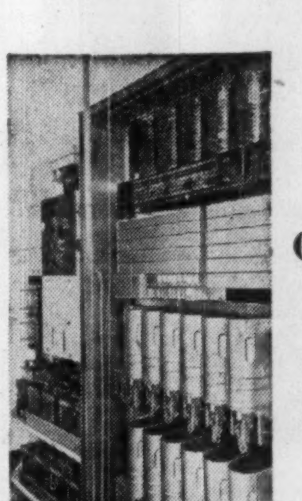

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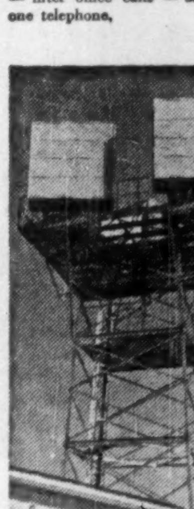

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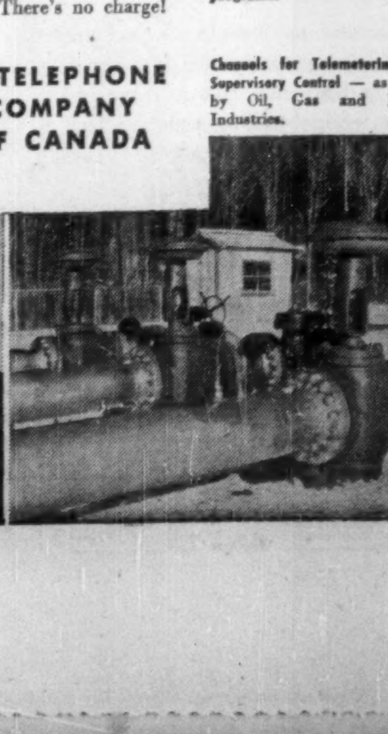

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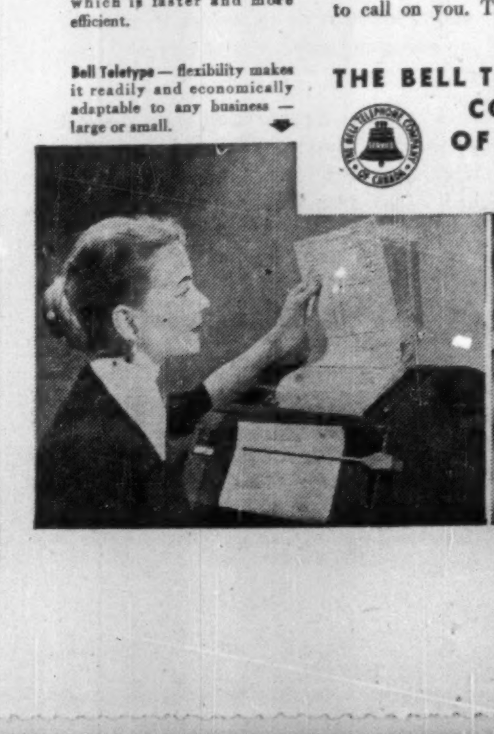

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Unlisted Stocks

(Compiled by Intercity Securities Corporation Limited, Toronto)
Sept. 24, 1956.

	Bid	Asked
Algoma C. & H.B. Rly. com.	29.00	31.00
Do. pfd.	1.50	....
Allens Toronto, units	43.00	....
Anglo Can. Telephone, A	28.25	29.25
Bowater Ltd.	5.75	5.95
Bowes Ltd., 1% pfd.	.75	.90
Brinton Peterboro Carpet	51.00	....
British America Assce.	118.00	125.00
B. C. Sugar	32.00	34.00
B. C. Telephone, 4½% pfd.	93.00	96.00
British Mortgage & Trust	215.00	225.00
Can. Cons. Grain, common	5.00	8.00
Do. units	85.00	....
Can. Crushed Stone, 6% pf.	96.00	101.00
Can. Delhi Pete.	7.50	8.00
Can. Foreign Securities	12.75	....
Can. Insurance Shares	100.00	....
Carlton Club	125.00	....
Cawthra Apts.	37.00	....
Chase, Dr. A. W., common	1.75	2.25
Colonial Steamships com.	200.00	....
Commercial Finance	48.00	....
Concourse Bldg., v.t.	53.00	....
Crain, R. L., pfd.	.80	....
Crown Life Insce.	146.00	152.00
Crown Zellerbach Canada	23.00	24.00
Debentures & Secs., 5% pfd.	92.00	97.00
Detroit Internat. Bridge	18.50	20.50
Dom. Can. Gen. Insce.	82.00	87.00
Dominion Life	1400.00	1650.00
Dom. Linseed Oil, pfd. & com	2.75	....
Dover Industries	10.00	11.00
Eastern Canada Savings	20.25	21.50
Eastern Trust Co.	30.00	33.00
Essex Packers common	2.00	3.00
Do., pfd.	40.00	44.00
Goderich Elevator	23.25	24.00
Granite Club	14.25	....
Gt. Britain & Can. Inv. com.	14.25	15.00
Do., pfd	117.00	....
Great Lakes Power, com.	18.50	20.00
Great-West Life Assce.	265.00	275.00
Guar. N. Amer., fully paid	400.00	425.00
Do., 20% pd.	86.00	....
Halifax Insce.	15.25	16.25
Halton & Peel Trust	10.00	11.00
Highland Dairy Pfd.	40.00	....
Homewood Sanitarium	90.00	....
Hudson's Bay Co.	26.75	27.75
Humber Amusement Pier	.35	.50
Humberstone Shoe	8.25	9.00
Industrial Mtge. & Trust	77.00	83.00
Ingersoll Machine, 4% pfd.	80.00	85.00
Do., B	5.25	6.00
Inland Natural Gas	8.25	8.50
Jenkins Bros., common	64.00	68.00
Lambton Golf Club	325.00	....
Lambton Loan Sarnia	80.00	84.00
Lawson & Jones 1% pfd.	.75	....
Lond. Can. Inv., $3 pfd.	48.00	52.00
Do., A	42.50	46.00
London Life Insurance	180.00	200.00
Lord Simcoe Hotel, A	3.50	4.25
Manufacturers Life	235.00	255.00
Monarch Life, 60% pd.	290.00	....
Morrow Screw & Nut	40.00	....
National Life	340.00	375.00
Nat. Sewerpipe, units	14.00	17.00
Niagara Lower Arch Bridge	64.00	....
Northern Telephone	4.10	4.40
Nova Scotia Trust	20.00	....
Oakville Wood, 6% pfd.	85.00	90.00
Paramt. Oshawa Theatres	12.50	....
Park Lawn Cemetery	1.75	....
Phillips Electrical	17.00	18.00
Prairie Royalty Trust, units	2.50	....
Prudential Trust	16.00	18.00
Rapid Grip Batten Pfd.	98.00	101.00
Reliance Pete., A & B	23.00	....
Do., pfd.	43.00	....
Robin Jones Whitman, pfd.	24.00	26.50
Royal Oak Dairy, B	3.25	....
Sherbrooke Trust	155.00	....
Sincennes McNaughton L.	3.00	....
Skyway Drive-In Theatre	1.40	1.70
Sovereign Life, 25% pd.	105.00	....
Standard Fuel, common	2.75	....
Do., pfd. $2.25	40.00	42.50
Summit Golf	15.00	25.00
Sun Life Assce.	265.00	275.00
Surpass Petrochemicals	1.50	1.53
Teleflex Ltd.	12.00	15.00
Thorncliffe Park	6.50	7.00
Toronto & London Inv.	2.75	....
Tor. Gen. Insurance	25.00	28.00
Tor. Medical Arts Bldg.	54.00	....
United Can. Shares	19.50	20.50
Waterloo Mfg.	7.00	8.00
Waterloo Trust	35.00	....
Westcoast Trans., units	148.00	152.00
Do., V.T.	25.75	26.75
Western Assce.	71.00	77.00
Western Life, 25% pd.	75.00	....
Wood Alexander, 6% pfd.	92.00	96.00

Unlisted Mines and Oils

(By Broker Dealers' Assoc. of Ont.)

Approximate quotations, 3 p.m., Sept. 24, subject to confirmation and change. An asterisk (*) indicates an increase in price; a dagger (†) a decrease in price.

	Bid	Ask		Bid	Ask
Abenakis	2	3	Columbind	2	4
Abeta	[illegible]	11	Comstock	8	10
Advance	1[illegible]	15	C Bi Ore	35	40
Alexander	4	6	Con Cop	29	32
Ama Kir	5	7	Conecho	6	8
Anabar	5	10	C Harper	†12	14
Anamaq	3½	5	C Vauze	†5	7
Anuwon	10	12	Cordell	—	16
Arctic	2½	3½	Crack S	12	15
Atl Chib	20	25	Craibbe	11	14
Bandwn	30	34	Croydon	5	7
Beacon	8	11	Derlac	2	4
Belfast	7	10	Despina	8	10
B Grass	6	8	Destrad	†5	8
B McDad	6	8	Dom Ex	8	10
Bracemq	7	10	Dunvegn	12	14
Braminc	13	18	Durham	4	6
Bright RL	2	3	East Ind	4	6
Bruce P	17	20	Echo Ind	3	5
Brunette	5	7	El Bon	*28	32
Camlaren	4½	6	Farcroft	4½	6
Camp I	40	43	Fleetwd	6	9
Camray	2	4	Forty Fr	40	50
Can Rad	7	9	Gall Chib	33	36
Capalask	17	19	Gan Cop	6	8
Canuba	†75	80	Gateway	4	6
Captain	8	10	Glenbrk	†8	10
Cn Mag	—	160	Glencona	4	5
Cn Alm	9	12	G Harper	10	13
Capital	†71	75	Goldmaq	4	6
Cayzor	†425	450	Goldyke	2	3
Cn Lith	†45	50	Gov Gold	5	7
Cn Man	10	12	Grd Chib	65	—
Cnt Hill	24	27	Gui Por	11	13
Caral	†30	35	HG Yng	17	20
Chellew	6	8	Hornfalt	11	13
Chipman	†33	36	Hot Min	8	10
Clinger	†4	6	Hucamp	11	14
Clix	7	9	Independ	12	14
Columbr	†5	7	Jardun	24	26

	Bid	Ask		Bid	Ask
Jean Lk	20	25	Pacemkr	†5	8
Jerome	6	8	Ptrd C	32	35
Kamlac	†11	13	Pax new	†65	75
KB Mng	23	26	Payne	2	4
Kenda P	2	4	Pascalis	9	11
Kenog	14	16	Peach	900	1100
Laronge	24	27	Pelangio	2	4
Larum	11	13	Pickring	17	20
L Expan	10	12	Picton	16	20
L Rnzy	*93	98	Pine P	*11	12
Lowr Can	2	3	Pitchvein	7	9
Lun Ec	47	52	Plum N	45	55
Lynwtn	25	30	Polestar	40	45
Magoma	10	15	Presdor	2	4
Main Ok	13	15	Quejo	†9	12
Manecho	7	9	Quest	1½	2½
Mall RL	6	8	Raglan	25	35
Mar Bird	†11	13	Rand M	5	7
Maree	3	5	Randona	1	3
Mate Yel	6	8	Red Brk	6	9
McCuaig	2	4	Redcon	4	6
McFinly	24	26	Rhyolite	1½	2½
Miles RL	2½	4	Richgrp	11	13
Millkirk	12	15	Rio T C	*330	340
Mindust	130	145	Rugged	*3	5
Mt Keno	2	4	Russet	5	6
M Fault	†60	70	Salmita	3	5
Montgr	†237	242	Sheldon	10	12
Montco	15	20	St Mary	15	20
Murmac	2	3½	Snow L	8	10
Nat Mal	13	15	S Dufalt	14	16
New Ang	3	5	Starlight	8	11
N Insco	8	11	Sunbear	3	4
New Met	15	18	Th'crest	*24	28
N Redwood	7	9	Tower	†8	12
New Wal	3	5	U Ridge	*20	25
Nickel I	7	9	Valor	†22	25
Nickel O	40	60	Viking	12	14
Nicoba	†16	19	Wadge	6	8
Nipiron	19	22	Wesley	9	11
Norbeau	85	95	Westall	3	5
Norcourt	2	4	West RL	*3	5
Norford	1	3	W Wasa	†4	6
Normar	3	6	Y David	14	16
Novel Pr.	2	3	OILS		
Obsk '45	*37	40	C Delhi	750	800
Oceanic	200	225	Cn Sup	†1525	1575
Oklend	7	9	N Ranch	8	10
Ont Rim	7	10	O Smoky	6½	8
Orchan	17	20	Paig Pete	5	8
Orofino	9	11			

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Record of Financing

Sales by Municipalities, Provincial and Dominion Governments, Offerings of Corporations and Securities.

DOMINION

Government of Canada Treasury Bills — Due Dec. 14, 1956, $135,000,000. Issued Sept. 14, 1956. Sold at $99.245 to yield 3.05%.

MUNICIPAL

School Commission for Mun. Ste. Ephrem-de-Fitchbay, Que. — 4¼% and 4½% debentures, due Aug. 1, 1957-58-76, $38,000. Issued Sept. 3, 1956. Sold at $96.90 to La Maison Bienvenu, Ltee.

School Commission for Mun. Ste. Etienne, Que. — 4% and 4½% debentures, due Oct. 1, 1957-59-76, $40,000. Issued Sept. 3, 1956. Sold at $97.57 to J. E. Laflamme, Ltee.

Town of Naudville, Que. — 4% and 4½% debentures, due Aug. 1, 1957-66-76, $27,000. Issued Sept. 4, 1956. Sold at $93.00 to Dominion Securities Corpn. Limited.

School Commission for Mun. of Parish of Ste. Adele, Que. — 4¼% and 4½% debentures, due July 1, 1957-61-76, $200,000. Issued Sept. 5, 1956. Sold at $96.07 to Gaston Laurent, Inc. and La Maison Bienvenu, Ltee.

Town of Swan River, Man. — 5% debentures, due Dec. 1, 1957-76, $100,000. Issued Aug. 23, 1956. Sold privately to James Richardson & Sons.

Township of Crowland, Ontario — 5% debentures, due Oct. 1, 1957-76, $946,500. Issued Aug. 23, 1956. Sold privately to Bankers Bond Corp. Ltd. and J. L. Graham & Co. Limited.

CORPORATE

Northern Electric Company, Limited — 4½% sinking fund debentures, to mature Nov. 1, 1976, $20,000,000. Dated Nov. 1, 1956. Offered at $100.00 and accrued interest by A. E. Ames & Co. Limited, Dominion Securities Corpn. Limited and Greenshields & Co. Inc.

Shawinigan Water and Power Company — 4¾% first mortgage and collateral trust sinking fund bonds, series "R," due Oct. 1, 1976, $15,000,000. Dated Oct. 1, 1956. Offered at $100.00 and accrued interest by Dominion Securities Corpn. Limited, Wood, Gundy & Company Limited, A. E. Ames & Co. Limited, Collier, Norris & Quinlan Limited, Nesbitt, Thomson and Company, Limited, McLeod, Young, Weir & Company Limited, Greenshields & Co. Inc., L. G. Beaubien & Co. Limited, Royal Securities Corporation Limited, W. C. Pitfield & Company Limited, Midland Securities Corpn. Limited, Gairdner & Company Limited, Bell, Gouinlock & Company Limited, Cochran, Murray & Co. Limited, Mills, Spence & Co. Limited, Rene-T. Leclerc Incorporee, Geoffrion, Robert & Gelinas, Inc., Burns Bros. & Denton Limited, Merrill Lynch, Pierce, Fenner & Beane, Credit Interprovincial, Limitee, James Richardson & Sons, Matthews & Company, Dawson, Hannaford Limited, Mead & Co. Limited, MacTier & Co. Limited, H. C. Flood & Co. Limited, Anderson & Company Limited, Brawley, Cathers & Company, Ross, Knowles & Co., R. A. Daly & Company Limited, Charles H. Burgess & Company, Houston, Willoughby & Company Limited, Tanner Bros. Limited, Pemberton Securities Limited, The Western City Company, Limited, Belanger Inc., J. C. Boulet, Limitee, F. J. Brennan & Company Limited, Canadian Alliance Corporation Limited, Casgrain & Company Limited, Clement, Guimont Inc., La Corporation de Prets de Quebec, Desjardins, Couture, Inc., Oscar Dube & Cie Inc., Eastern Securities Company Limited, Garneau, Boulanger Limitee, Grant Johnston & Co. Limited, Grenier, Ruel & Cie Inc., Hamel, Fugere & Cie, Limitee, J. E. Laflamme, Limitee, Lagueux & DesRochers Limitee, McNeil, Mantha, Inc., Savard & Hart Inc., Scotia Bond Company, Limited, Societe Generale de Finance, Inc., Societe de Placements, Incorporee and Stanbury & Company Limited.

George Weston Limited — 4¾% sinking fund debentures, series "B," to mature Oct. 15, 1971, $10,000,000. Dated Oct. 15, 1956. Offered at $100.00 and accrued interest by Wood, Gundy & Company Limited, McLeod, Young, Weir & Company Limited, A. E. Ames & Co. Limited, Dominion Securities Corpn. Limited, Nesbitt, Thomson and Company, Limited, Royal Securities Corporation Limited, Greenshields & Co. Inc., W. C. Pitfield & Company, Limited, James Richardson & Sons, Burns Bros. & Denton Limited, Ross, Knowles & Co. Ltd., Midland Securities Corpn. Limited, Cochran, Murray & Co. Limited, Mills, Spence & Co. Limited, Bell, Gouinlock & Company Limited, Harris & Partners Limited, Dawson, Hannaford Limited, Osler, Hammond & Nanton Limited, R. A. Daly & Company Limited, Wills, Bickle & Co., Bankers Bond Corporation Limited, Collier, Norris & Quinlan Limited, Rene-T. Leclerc Inc., Equitable Securities Canada Limited, Pemberton Securities Limited, Deacon Findley Coyne Limited, J. H. Crang & Co., Oldfield, Kirby & Gardner Limited, The Western City Company Limited, Yorkshire Securities Limited, Eastern Securities Company Limited, Stanbury & Company Limited, F. J. Brennan & Company Limited, Okanagan Investigations Limited and Walwyn, Fisher & Co.

PREFERRED

Laurentide Acceptance Corporation Limited — $1.20 series cumulative redeemable preferred shares, 1956 (par value $20.00 per share) $1,000,000. (50,000 shares). Offered at $20.00 per share to yield 6% by Gairdner & Company Limited, F. J. Brennan & Company Limited, Burns Bros. & Denton Limited, Lajoie, Robitaille & Cie, Limitee, Credit Canadien Inc., Credit Anglo-Francais Limitee, Canadian Alliance Securities, Limited and Rene-T. Leclerc, Incorporee.

Belcher Drills Copper Showings

A diamond drilling program to probe copper showings on the Innetalling Island property of **Belcher Mining Corp.** will be carried on throughout the winter, Douglas Banks, president, reports.

Drilling on the company's large magnetite-iron deposit on the island has been completed. The copper discoveries were made early in the summer when drills unexpectedly turned up massive chalcopyrite. It was intersected later in nine holes over a 2¼-mile length and ½-mile width, assaying better than 6% copper.

Fano Drill Shows Two Ore Bodies

Two ore bodies have been indicated by drilling on the Nemeiben Lake, Sask., property of **Fano Mining & Exploration,** company officials report.

Better than 1% nickel-copper mineralization was shown for 45 ft. in hole No. 7 at the 500-ft level. A hole 100 ft. to the west showed some 35 ft. with over 1% nickel-copper at the same horizon.

About 3,000 ft. of drilling was done this year on the northerly half of one of the company's 36 claims.

Government Bonds

Sept. 25, 1956
(Supplied by Investment Dealers' Assoc. of Canada)

%	Due	Bid	Ask
Govt. of Can. Bonds:			
3	Jan. 1959 ...	97½	98
3	June 1960 ...	97½	97
3	Feb. 1962 ...	95½	96
3	Oct. 1963 ...	94½	95
3	Sept. 1966 ...	93½	94
3	Perpetual ...	†85	86½
2¾	June 1968 ...	89½	90½
3¾	Jan. 1975/78.	98¾	100½
3¼	June 1974/76.	93	93
Can. Nat. Railways:			
3	Jan. 1959 ...	97	98
2¾	Jan. 1967 ...	89½	90½
3	Jan. 1966 ...	92½	93½
2¾	Sept. 1969 ...	89	90
4½	July 1957 ...	♦99⅞	100½
Grand Trunk Pacific Rly.:			
3	Jan. 1962 ...	●95	97
4	Jan. 1962 ...	●99½	101
Int. Bank of Reconstruct. & Development			
3½	Apr. 1965 ...	89	91
3½	June 1969 ...	90	93
C'wealth of Australia:			
4	Nov. 1970 ...	94½	96½

%	Due	Bid	Ask
Prov. Govt. Bonds			
Alberta:			
2¾	Mar. 1970 ...	♦89	91
British Columbia:			
4½	Jan. 1969 ...	♦98	100
3	Dec. 1960 ...	95	96½
3	June 1964 ...	91	93
5	Sept. 1959 ...	♦101	103
B. C. Power Comm.:			
3	Oct. 1967 ...	85	87
Manitoba:			
4	Dec. 1957 ...	♦99	100½
5	Dec. 1959 ...	●101	103
5½	July 1958 ...	101	102½
3	Oct. 1965 ...	89	91
4½	Dec. 1956 ...	♦99½	100½
New Brunswick:			
4½	Apr. 1961 ...	♦99	101
2¾	June 1966 ...	82	84
3½	May 1957 ...	98	99½
3½	Sept. 1965 ...	90	92
Nova Scotia:			
4½	Nov. 1960 ...	♦99	101
5	Mar. 1960 ...	♦100	102
3½	June 1963/65.	89	91
3	June 1956/58.	97	98½
2¾	June 1965/68.	81	83

%	Due	Bid	Ask
Ontario:			
2¾	Nov. 1965/69.	84	86
4	June 1962 ...	●98	100
4½	Jan. 1962 ...	♦100	102½
2¾	July 1967/76.	82½	85
3	Nov. 1963/65.	89½	91½
5	May 1959 ...	●101	102½
4	June 1969/72.	95½	97½
Ontario Hydro Comm.:			
4	Aug. 1957 ...	●99	100½
2¾	Oct. 1965/68.	84	86
3	Dec. 1963/65.	89	91
3	Nov. 1967/69	85½	87½
3½	May 1974/79.	86	87½
Prince Edward Island:			
3	Oct. 1965 ...	88	90
Quebec:			
4½	Aug. 1958 ...	99	101
4½	Jan. 1963 ...	99	101
3	Sept. 1962/64.	90	92
Quebec Hydro Commission:			
3	Feb. 1969/73.	83½	86
3	Dec. 1958/60.	93½	95½
3½	May 1971/74.	86	88
Saskatchewan:			
5	Aug. 1958 ...	100	102
4½	Mar. 1960 ...	♦99	101
5	Dec. 1959 ...	♦101	103
3	Mar. 1963 ...	90	92
3½	Nov. 1960/62.	92	94
3¾	Oct. 1962/65.	93	95
Newfoundland:			
4¾	July 1965 ...	97½	100

●Payable Can., N.Y. or £. ♦Payable Can. or N.Y. †Callable on or after Sept. 15, 1956.

Corporation Bonds

(Supplied by Investment Dealers' Assn. of Canada)
Sept. 25, 1956

Public Utility Issues	Int. Rate %	Due	Bid	Ask	Prev. Week Bid
Alg. Cen. H.B.R.	5	'59	143	146	143
Bell Telephone	3	'77	82	85	82
Do.	3¾	'79	91	94	91
Bowater Pr. Co.	3¾	'80	87½	90½	87½
Brazilian Traction L. & P.	4¾	'70	83	86	83
B. C. Electric	3½	'67	89½	92½	89½
Do.	3½	'75	88	91	88
Do.	3¾	'80	89½	92½	89
Do.	4¾	79	99	102	99
B. C. Telephone	4¾	'75	98	101	98
Calgary Power	3½	'72	91	94	91
Consumers' Gas	4½	74	92	95	92
Gatineau Pr. D	3½	'70	89	92	89
Gt. Lakes Pwr	4½	'75	90	93	94
Maclaren-Quebec Power	3	'69	87	90	87
Mex. Lt. & Pwr.	5	'75	87	90	87
Nat. Lt. & Pwr.	4½	'61	96	99	97
North. Que. Pr.	4½	'67	92½	95½	92½
Power Corp.	3½	'67	86½	89½	87
Quebec Power	3	62	91	94	91
St. Maurice Pr.	3½	70	89½	92½	89½
Shaw. W. & Pr.	3	'71	85	89	85
Do.	3½	'73	89	92	89
Wpg. Electric	3¾	'71	92	95	92½
Industrial Issues:					
Abitibi Pr., P.	4	'74	94½	97½	94½
Acadia-Atlantic Sugar	4	'74	91	94	91
Alum. Co. of C.	4½	'73	97	100	97
Bathurst P. & P.	5½	'73	98	101	98
B. A. Oil	3½	74	87½	90½	87½
Burns & Co.	4	'63	95	98	95
Can. Bread	4½	'67	90	93	90
Can. Cement	3¾	'75	91	94	91
Can. Steamship	4	'66	95½	98½	95½
Cdn. Breweries	4¾	'79	99	102	99
Cdn. Canners	3¾	'70	88	91	90
Cdn. Celanese	3	'62	89	92	89
Cdn. Chem. Co.	5½	'71	94½	97½	94½
Can. Industries (1954) Ltd.	3¾	'74	90½	93½	90½
CPR	3½	'72	89½	92½	89½
Can. West. Lum.	4	'62	96	99	96
Cockshutt Plow	4½	'65	94½	97½	94½
Columbia Cell.	5	'68	97½	100½	97½
Dom. Fd. & Stl.	4½	'69	97	100	97
Dom. Stores	4½	'75	94½	97½	94½
Dom. Tar & Ch.	5	'67	97½	100½	97½
Dryden Paper	4¾	'74	95	98	95
T. Eaton Acc.	4¾	'74	96½	99½	96½
E. B. Eddy	4	'74	90	93	90
Elk Falls Co.	5	'75	97	100	97
Gen. Mot. Acc.	4	'64	94½	97½	94½
Gunnar Mines	5	'60	96	99	96
H. Bay O. & G.	4	'75	88	91	88
Husky Oil	5	'69	89	92	89
Imp. Tobacco	3	'70	87	90	87
Imp. Oil	3¾	'75	90	93	90
Indust. Accept.	5½	'75	97½	100½	97
Irving Oil Co.	5½	'67	97	100	97
Loblaw Groc.	4¾	'73	96	99	96
Maple L. M.	3¾	'63	91	94	91
Massey-Harris	5	'67	96	99	96
Monarch Knit.	4¾	'71	72	75	72
N. S. Stl., Coal	3½	'63	94	97	94
*Ont. Jockey Cl.	5½	'72	85	88	85
Price Bros.	3½	'66	93	96	93
Pronto Uranium	5	'60	96	99	96
St. Law. Corp.	5	'72	97½	100½	97½
Silverwood Dair.	4	'71	89	92	89
Simpsons Ltd.	4¾	'73	97	100	98
Simpsons-Sears.	4½	'79	96½	99½	96½
Steel Co.	2¾	'67	90	93	90
Traders Finance	5½	'69	99	102	99
Union Accept.	5½	'68	96½	99½	96½
Un. Grain. Gr.	3¾	'70	87	90	87
Weston, Geo.	4¾	'68	96	99	96

*Ex. warrants

CONVERTIBLE ISSUES

Ajax Pete.	5	'62	87	91	87
Anglo Am. Exp.	5½	'75	98	101	98
Atlas Steels Ltd.	5	'67	115	120	115
Braz. Traction	4½	'71	81	84	81
Can. So. Oils	5	'61	83	86	83
CPR	3½	'66	100	103	102
Do.	4	'69	103	106	104½
Cdn. Petrofina	4	'72	126	129	124
Cent. Leduc	5	'65	92½	95½	92½
Cockshutt Farm	5	'68	89	92	89
Dom. Steel & C.	4½	'70	114	117	116
Dom. Textile	4	'66	91	94	91
Jupiter Oils	5	'67	88	92	89
Kroy Oils Ltd.	5	'67	98	101	98
N. Concord Dev.	5½	65	91	96	91
N. Sup. Oils	5	'64	88	91	88
Pathfinder Pete.	3-5	'62	81½	84½	81½
Phillips Elec.	5½	'70	108	112	106
Scurry Oils	5	'64	87	92	87
Silverwood Dair	5½	'72	105	110	105
Trad. Finance	4¾	'69	123	129	99
Trans Emp. Oil	5½	'67	96	...	96

MACASSA MINES reports gross value of production in August at $81,360 from 7,271 tons milled averaging $11.19 a ton. The mine was closed for two weeks holiday and major repairs during the month.

PERRON GOLD MINES has disposed of its interest in **Croiner Pershing Mines.** Perron is a mining holding and financing company.

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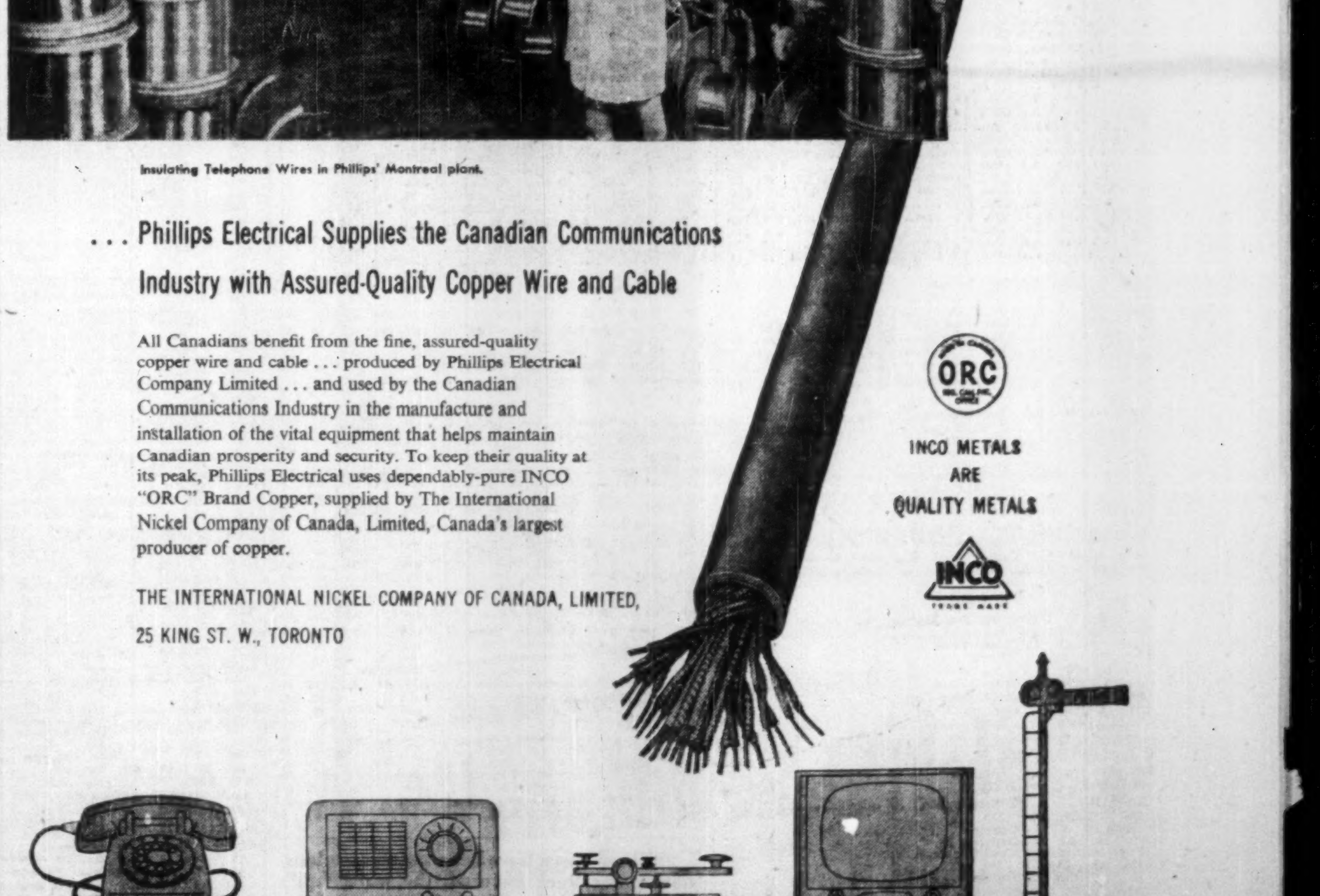

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THE WEEK'S QUOTATIONS

Quotations here listed are the official, exchange prices for listed stocks including curb market quotations. For unlisted stocks, quotations by unlisted dealers are given. The Financial Post cannot accept any responsibility for these quotations.

Montreal and Toronto Winnipeg, Calgary and Vancouver

Bid and Ask quotes of Toronto and Montreal exchanges up to press time are published on page 40

WEEK ENDING SEPTEMBER 21, 1956

Range 1956 High	Low	Div. R'te $	Y'ld Sep.21 %	Company	Sales	Last Sep. 14	Week end. Sep. 14 H	L	Close
1.75	.70			Abitica Lum.	112950	1.40	1.35	1.10	1.35
43½	34½	*1.55		Abitibi	15309	36	36	35	35½
26¾	23½	1.12½	4.8	Do. 4½% pref.	1137	23½	24	†23	23½
12¼	9	.50	5.6	Acadia Atlan.	325	9½	10	9	9
101½	100	5.00	5.0	Do. 5% pref.	nil	..	..	98	100
24¾	20½	1.20	5.7	Do. (A)	1058	21¼	21¼	20½	21
		▲1.00		Admiral	nil	..	16½	18½	17
8½	7	.40	5.5	Agnew Surp.	670	7½	7½	7¼	7½
10½	8½	.55	6.5	Do. pref.	nil	..	7	7½	8½
2.10	1.55			Albt. Dist.	1100	1.60	1.65	1.60	1.60
1.75	1.40			Do. V.T.	3100	1.40	1.45	1.40	1.40
127	93			Algoma Steel	3420	114	115¼	110	112
26½	21½	1.00	4.7	Alum. of Can. p	170	21½	21½	21¼	21½

Range 1956 High	Low	Div. R'te $	Y'ld Sep.21 %	Company	Sales	Last Sept. 14	Week end. Sep. 21 H	L	Close
		*.25		Cons. Fire Ins.	nil	..	7	10	4
47½	33½	*1.30+.40		Cons. Paper	14579	38½	39½	37	37½
3	2½	*		Cons. Press A	nil	..	2.35	2.50	2.30
1½	1	...		Do (B)	nil	..	1	1½	1
36	28½	.80+*.95		Cons. Smelters	27446	30½	31	28½	30½
6.75	3.90	*		Cons. Textiles	nil	..	4.00	4.50	3.90
		1.00	4.9	Do pref.	nil	..	..	..	†20½
27½	20	.80	2.9	Consumers' Gas	9110	26	27½	25	27½
33½	30	1.50	4.9	Consum. Glass	20	30½	30½	30½	30½
		*▲1.35■		Cont. Can.■	nil	..	..	..	85
5	4½			Copp Clark	nil	..	4½	4½	4½
18	15	*.50		Corbys Vot.	390	16	16	15	15
17½	15	*.50		Do. Non-Vot B	295	15	16	15	15½
13½	11½	.70	5.4	Cosmos Imp.	70	13	13½	13	13
7½	5½	.30	4.1	Craig Bit	nil	..	7½	7½	7½
22½	20	.60	2.7	Crain, R. L.	nil	..	20	..	22½
11½	9	*.50+.05		Credit Accept.	nil	..	9	10	9
7½	5			Crestbrook Ltd.	7450	5	7½	5	5
49½	49½	2.75	5.6	Do. pref.	75	†49	†49	†49	†49
1	1			Do. Warr.	nil	..	1.20	1.25	†1.15
				Cres. Creamp. pf.	nil	..	..	..	62½

Range 1956 High	Low	Div. R'te $	Y'ld Sep.21 %	Company	Sales	Last Sep. 14	Week end. Sep. 21 H	L	Close
57½	47	*1.40	..	Loblaw A	215	50	48½	48	48
101	70	*1.40	..	Do. B	nil	..	..	..	77½
32½	29	1.50	5.2	Do. pref. A	705	29½	29½	28½	29
23	17	.40	2.1	Loblaw Comp. A	1280	19	19	18	19
23½	17	.40	2.2	Do. B	3045	18½	19½	18	18
48	41	2.40	5.8	Do. pref.	735	42½	42½	41½	41½
90	69½	▲1.50+‡1.25		Loblaw Inc.	50	69½	70	70	70
				Lochabar A	nil	..	10	..	..
				Do. B	nil	..	2½	..	..
120	120	4.00+‡1.00		Loew's Theatres	23	115	120	120	120
7½	7	‡.25		Lon. Can Invest.	20	†7½	†8	†8	†8
3	1	*1.50	..	Lon. Hose	nil	..	1.05	1.75	1.75
8	6	*.80+■■.40		Do. (A)	125	6½	6	6	6
26½	18½	.90	4.5	Lower St. Law. p	25	19	20	20	20
24½	20	1.00	4.5	Lowneys	200	22	22	22	22
5.25	4.10	.24+‡.03		Lucky Lager	1700	4.45	4.45	4.25	4.45
43½	39	‡2.00	..	Mackin Steel	nil	..	43	44	43½
100	100	5.00	5.0	Do. pref.	nil	..	100	..	100
100	82	2.00+*1.50		Maclaren Pr.	235	85	85	82	85
46	37	.50	1.4	MacMil. & Blo A	60	37½	37	37	37
48	36	.80+*.20		Do. (B)	3596	37½	37½	36	36½
1.70	1.25			Mages SP.G.	600	1.25	1.20	1.20	1.20

Range 1956 High	Low	Div. R'te $	Y'ld Sep.21 %	Company	Sales	Last Sep. 14	Week end. Sep. 21 H	L	Close
80	57½	1.40+‡.30		Steel of Can.	10244	66	66½	64½	66
103½	100	5.25	5.2	Steinberg 5¼% pf	105	100¼	100¼	100	100¼
50	47	1.60+.20		Sterling Trust	nil	..	46½	48	48½
5	3½			Stovel Press pref.	nil	..	4	5	4½
15	14	1.50	11.0	Stowell A pref.	nil	..	15	..	14
10	6			Do. B	nil	..	9	..	8½
16½	13½	*.70+.25		Stuart, D. A.	20	16½	16½	16½	16½
♦250	♦150			Suez Canal Cap.	nil	..	..	..	♦150
♦188	♦188			Do. Founders	nil	..	..	..	♦188
♦148½	♦98			Do. Jouissance	nil	..	..	..	♦98
9¾	9¼	.50	5.2	Sun Publishing A	665	9¼	9¾	9½	9¾
8½	8			Do. B	525	8½	8½	8½	8½
8½	7			Sup. Propane	100	7	7	7	7
26½	25	1.40	5.7	Do. pfd.	nil	..	..	24½	†24½
3.50	2.80			Do. Warr.	940	3.35	3.35	2.90	2.90
26½	18	.80	4.4	Sup. Pete. Ord.	3310	19½	19½	18	18
50	21½	*.04		Dom. Com.	75	33	30	30	30
104	100	5.00	5.0	Do. pref.	50	100½	100½	100	100
10	5½	*.20		Switson Ltd.	475	7	6½	6	6
44	40	1.20+*.96		Tamblyn	635	41½	41½	40	40
50	46½	2.00	4.3	Do. 4% pref.	nil	..	39	46	46½
11	9	*.45+.10		Taylor Pearson	100	10	9½	9½	9½
11½	10	.50	5.0	Do. 5% pref.	125	10	10	10	10
6½	5½	*.24		Third Cdn. G.I.	1300	6	6	5½	6
6½	6½	.50	6.7	Tip Top Can. A.	nil	..	..	..	6½
15	10	*		Tip Top Tailors	50	10	10½	10½	10½
.75	.75			Tooke Bros.	nil	..	.85	1.10	.75
1.75	1.25			Do. pref.	100	1.50	1.40	1.40	1.40

Where there have been no transactions during the week covered, the word "nil" is shown under sales and the quotations shown are the bid, ask and last sale price, instead of high, low and close.

▲U. S. funds. ■Stock div. ■■On arrears. †Less than Board Lot; figures are ...

Mining Stocks

WEEK ENDED SEPTEMBER 21, 1956

Range 1956 High	Low	Div. Rate $	Company	Sales	Last Sept. 14	Week Ending September 21 High	Low	Close
.80	.32	...	Abbican	3,796	.53	.53	.45	.42
.30	.13	...	Acadia Uran.	38,725	.13	.14	.13	.14
.16	.07	...	Ad Astra	500	.10	.09	.09	.09
5.50	4.30	...	Advocate	2,900	4.65	4.75	4.30	4.30
.14	.07	...	Ainsworth	nil	...	.07	.10	.10
.65	.45	...	Akaitcho	3,000	.50	.52	.50	.50
.90	.20	...	Alba	12,099	.23½	.22	.20	.22
19.50	13.37½	...	Algom	3,320	18.00	17.75	16.50	16.50
98.00	92.50	...	Do. 5% debs.	15	93.50	92.50	92.50	92.50
10.00	6.50	...	Do. warr.	3,430	9.00	9.00	8.50	8.65
.15	.09	...	Alta.	2,500	.11	.10½	.10½	.10½
.25	.15	...	Amal. Lard.	11,500	.18	.18	.16	.16
.22	.13	...	Amer'm.	20,500	.17	.18	.15½	.17
2.70	1.55	*.02	Am. Neph.	12,353	2.05	2.15	1.90	1.95
.33	.15	...	Am. Stand.	154,600	.25	.33	.26	.33
3.70	2.41	...	Anacon Ld.	29,232	2.65	2.59	2.45	2.50
13.50	12.25	.50	Anglo-Hur.	2,727	12.62½	12.50	12.50	12.50
1.98	1.00	...	Anglo-Rou.	48,235	1.42	1.45	1.20	1.40
.71	.35	...	Anthonian	21,500	.45	.45	.38½	.40
3.30	1.51	...	Arcadia	92,955	2.98	2.98	2.55	2.70
.65	.35	...	Area	2,000	.36	.36	.35	.36
.70	.15	...	Arjon	27,500	.18	.20	.18	.18
.21	.04½	...	Arno	37,900	.14	.12	.06	.11
.52	.16	...	Ascot Met.	24,600	.17	.18	.16	.17
.24	.11	...	Atlas Sulp.	267	.13	.12	†.10	†.10
.25	.13	...	Atlas Y'fe	10,500	.16	.16	.15	.15
.21½	.11	...	Atlin-Ruff.	37,500	.18½	.18	.15	.18

Range 1956 High	Low	Div. Rate $	Company	Sales	Last Sept. 14	Week Ending September 21 High	Low	Close
.35	.64	...	Cobalt	18,285	.65	.69	.66	.65
1.12	.71	*.03	Cochenour	3,050	.89	.85	.80	.82
.92	.65	...	Cody-Reco	37,700	.76	.82	.71	.71
.25	.12	...	Coin Lake	11,500	.14	.13	.12	.13
2.25	.95	...	Col'stream	114,894	1.50	1.50	1.32	1.37
.21	.21	...	Coleman A	nil	...	.25	...	†.17
.25	.15	...	Do. B	500	.17	.25	.25	.25
.31	.09	...	Colomac	24,700	.12	.13	.11	.11½
3.50	2.10	...	Coniagas	7,260	2.30	2.45	2.25	2.30
.63	.40	...	Coniaurum	3,730	.47	.47	.42½	.44
.44	.25	...	Conro	26,750	.27	.27	.25	.27
.74	.23	...	Con. B'keno	208,319	.52	.57	.48	.54
.64	.25	...	Con. Beta	18,133	.29	.30	.25	.30
.59	.35	...	Con. Bi-Ore	12,800	.47	.43	.35	.38
.40	.34	...	Con. Callinan	15,704	.38	.38	.34	.34
.38	.14	...	Con. C. Cad.	32,620	.17	.16	.14	.15
11.12½	8.80	...	C. Denison	24,445	9.80	9.90	9.00	9.20
4.80	3.35	...	Do. warr.	5,775	3.60	3.75	3.35	3.55
4.00	3.10	*.10	Con. Disc'y.	7,986	3.35	3.35	3.10	3.25
1.95	1.27	...	C. Fenimore	13,021	1.63	1.63	1.47	1.48
.40	.20	...	Do. warr.	300	.35	.37	.37	.37
.18	.10½	...	Con. Gillies	14,800	.11	.11	.11	.11
.84	.21	...	C. Gold Arr.	21,625	.21	.23	.21	.21
.50	.30	...	C. Guayana.	7,000	.32	.34	.31	.31
3.75	.44	...	C. H'well	1,054,574	1.90	1.93	1.50	1.75
5.10	3.70	...	Con. Howey	5,380	4.00	4.10	3.70	3.95
.87	.35	...	C. Marbenor	4,300	.38	.36	.35	.35
1.10	.26	...	C. Morrison	18,925	.30½	.31	.26	.28
.94	.71	...	Con. Mosher	7,750	.75	.75	.71	.75
.44	.20	...	Con. Negus.	10,198	.24½	.24	.20	.20
.45	.11	...	Con. Nich.	13,266	.12	.13	.12	.12

(Continued on next page)

1956 Range High	Low	Div. R'te $	Y'ld Sep.21 %	Company	Sales	Last Sep. 14	Week end. Sep.21 H	L	Close
56½	40	1.30+*.20		Tor. Dom. Bank	3486	45½	45½	44	44½
24	16½	.80+*.20		Tor. Elevators	125	21½	20	20	20
40	35	1.40	4.0	Tor. Gen. Tr.	nil	..	34½	37	35
25	20	1.00	5.3	Toronto Iron	nil	..	20	20	†19
24	20	1.00	5.0	Do. A	330	†19	20	†19	20
116	112½	5.00	4.5	Tor. Mtge.	nil	..	112½	..	112½
36	36	*.75		Tor. Savings	nil	..	36½	..	36
34	33	1.20+*.30		Traders Bldg.	nil	..	33	..	33
48½	40	2.40	5.0	Traders Fin. A	5133	47½	48½	46½	48
45	40	2.40	5.5	Do. B	nil	..	43	48	44
102	100	4.50	4.5	Do. 4½% pref.	nil	..	..	97½	100½
48	48			Do. Warr.	nil	..	50	..	48
17½	17½	1.00	5.9	Do. A Rights	nil	..	17½	..	17½
19	18½	1.00	5.3	Do. B Rights	nil	..	18½	..	18½
49	41	2.00	4.3	Do. 5% pfd.	610	47½	48½	47	47
..	..			Transair A	nil	..	..	..	..
.80	.45			Do. B	2100	.75	.70	.65	.65
15	12	*▲▲.25		Trans-Can. C.F.	65	12	12½	12½	12½
85½	44½			Trans-Mt. Oil	12212	75	80	74	78
21	8			Trans-Prairie	942	16	15½	14½	15½
156	137	7.00	5.1	Tuckett Tob. P.	90	137	137	137	137
6	4½			Union Accept.	100	5½	5½	5½	5½
9	7	.60	7.1	Do. pref.	100	8½	8½	8½	8½
66	46½	1.40	2.4	Union Gas	855	61½	62	59½	59½
8	7½	.50	5.0	Un. Amuse A	nil	..	8	..	10
7	7	.50	7.1	Do. B	nil	..	7	..	7
8	8			Do. A V.T.	nil	..	8	10	8
22	20½	*.65		United Can Shs.	50	20½	†19½	†19½	†19½
31	29	1.50	5.4	United Corp. A	nil	..	30	..	†28
30	19½	.40+*.30		Do. B	1000	25½	25½	24½	25½
13	11			United Distill.	nil	..	11	..	12
62	57	3.00	5.1	United Fuel A pf	146	59½	59½	59	59½

Dividends Declared

	This payment $	Date payable	Date of record*
Abitibi Pwr. & Pap.	.42½	Oct. 1	Sep. 1
Do. 4½% pf.	.28½	Oct. 1	Sep. 1
Acadia-Atlan.	.12½	Oct. 1	Sep. 10
Do. $1.20 pfd. A	.30	Oct. 1	Sep. 10
Admiral Corp.	†.25	Sep. 29	Sep. 15
Agnew-Surpass	.10	Dec. 3	Oct. 31
Do. 5½% pf.	.27½	Dec. 3	Oct. 31
All-Cdn-Div Cap	.05	Oct. 15	Sep. 30
Amer. Cyanamid	†.75	Sep. 28	Sep. 4
Do. 3¾%pf.	†.9375	Oct. 1	Sep. 4
Anglo-Cdn. Pulp & Pap.	.50	Oct. 6	Sep. 15
Do. $2.80 pfd.	.70	Oct. 20	Sep. 29
Anglo-Nfld. Dev.	.15	Oct. 5	Sep. 7
Anthes-Imp. pfd.	1.31¼	Oct. 1	Sep. 25
Do. Com.	.30	Oct. 15	Oct. 1
Aro Equip.	†.25	Oct. 15	Oct. 3
Ashdown Hdwre. A	.15	Oct. 1	Sep. 10
Do. B	.18	Oct. 1	Sep. 10
Asbestos Corp.	.25	Sep. 28	Sep. 7
Ash Temple A 6% pf	1.50	Oct. 1	Sep. 18
Do. B 6½% pf.	.16¼	Oct. 1	Sep. 18
Assoc. Tel. & Tel. A	†1.00	Oct. 1	Sep. 4
Atlantic Whol. A & B	.15	Oct. 1	Sep. 15
Do. 5½% pf.	.55	Dec. 1	Nov. 15
Atlas Steels	.25	Nov. 1	Oct. 3
Bank of Nova Scotia	.45	Nov. 1	Sep. 29
Beatty Bros.	.10+‡1.10	Oct. 1	Sep. 14
Beaver Lumber A	.25	Oct. 1	Sept. 10

	This payment $	Date payable	Date of record*
Confed Life Assoc.	.38	Dec. 15	Dec. 1
Cons. Finance A & B	.25	Oct. 1	Sep. 1
Cons. Paper	.40	Oct. 15	Sep. 7
Consumers Gas	.20	Oct. 1	Sep. 14
Craig Bit	.07½	Oct. 10	Sep. 30
R. L. Crain	.15	Sep. 29	Sep. 7
Crown Life	.40	Oct. 1	Sep. 20
Crown Trust	.15	Oct. 1	Sep. 20
Crown Zell.	†.45	Oct. 1	Sep. 10
David & Frere A	.75	Sep. 28	Sep. 14
Delnite M.	.02	Oct. 1	Aug. 24
Dome Mines	.17½	Oct. 30	Sep. 28
Dom. Corset	.25	Oct. 1	Sep. 14
Dom Fabrics	.10	Nov. 1	Oct. 15
Do. pf.	.37½	Nov. 1	Oct. 15
Dom. Fdries & Stl.	.20	Oct. 1	Sep. 10
Do. 4½% pf.	1.12½	Oct. 15	Sep. 24
Dom. Glass	.35	Oct. 15	Sep. 28
Do. pfd.	.17½	Oct. 15	Sep. 28
Dom. Life	3.00	Sep. 30	Sep. 25
Dom. Tar & Chem.	.12½	Nov. 1	Oct. 1
Do. $1. p.f.	.25	Oct 1	Sep. 1
Dom Textile 7% pf	1.75	Oct. 15	Oct. 1
East. Bakeries 4% pf.	1.00+‡1.50	Oct. 15	Sep. 29
East. Can. Sav. & L.	.20	Oct. 1	Sep. 20
East Trust	.25	Oct. 1	Sep. 20
Economic Inv-Tr	.25	Sep. 28	Sep. 14
Enamel & Heat A	•.10	Oct. 31	Sep. 29
Essex Packers 5% pf	.62½	Oct. 2	Sep. 15
T. H. Estabrooks 4.16% pf.	.26	Oct. 15	Sep. 14
Fanny Farmer	†.37½	Sep. 29	Sep. 17
Foundation Co.	.20	Oct. 19	Sep. 28
Fraser Cos.	.30	Oct. 25	Sep. 29
Galt Malleable 6% 1st pf.	♦1.02	Oct. 1	Sep. 14
Do. 6¼% 2nd pf.	♦1.06	Oct. 1	Sep. 14
Gat. Pwr.	.35	Oct. 1	Aug. 31
Do. 5% pf.	1.25	Oct. 1	Aug. 31
Do. 5½% pf.	1.37	Oct. 1	Aug. 31
Gen. Dynamics	†.75+■stk.	Nov. 10	Oct. 10
Gen. Electric New	†.50	Oct. 25	Sep. 21
Giant Mascot M	.01½	Oct 1	Sep. 14
Goodyear Tire	1.00	Sep. 30	Sep. 10
Do. pfd.	.50	Oct. 31	Oct. 10
Goulds Pumps 5% pf	†.25	Oct. 16	Sep. 28
Grafton & Co. A	.25	Dec. 15	Nov. 26
Grand & Toy	.25+‡.10	Sep. 30	Sep. 21
Gt. Lakes Pap.	.40	Sep. 30	Sep. 14
Do. B	.30	Sep. 30	Sep. 14
Gt. Lakes Pr. 5% p.	.31¼	Sep. 29	Sep. 1
Gt. West Garm. 6% pf.	.15	Sep. 30	Sep. 15
Gt.-West Life Ass.	.75	Oct. 1	Sep. 14
B. Greening W.	.05+‡.10	Oct. 1	Sep. 15
Guaranty Trust	.17½	Oct. 15	Sep. 28
Gypsum Lime	.30	Dec. 1	Nov. 1
Hahn Brass	.25	Oct. 1	Sep. 12
Do A pf.	.20	Oct. 1	Sep. 12
Ham. Cotton 5% pf.	1.25	Nov. 15	Nov. 5
Harding Carpets	.15	Oct. 1	Sep. 15
Hayes Steel	1.50	Nov. 1	Oct. 22
Hendershot Pap	††.06¼	Oct. 15	Sep. 28
Do. 6% pf	**2.80	Oct. 1	Sep. 14
Do.	♦♦.70	Oct. 1	Sep. 14
Hollinger Cons.	.06	Sep. 28	Aug. 31

	This payment $	Date payable	Date of record*
Macmillan & Bl. A	.12½	Sep. 28	Sep. 7
Do. B	.20	Sep. 28	Sep. 7
Maclaren Pwr. & Pap.	.50+‡.50	Sep. 28	Aug. 31
Mailman Corp. $1 p.	.25	Sep. 29	Sep. 19
Man. Sug. 6% p.f.	3.00	Oct. 1	Sep. 14
Maple Leaf Mill. 5% pf.	1.25	Oct. 1	Sep. 14
Maritime Tel.	.20	Oct. 15	Sep. 20
Do. 7% pf.	.17½	Oct. 15	Sep. 20
Maxwell Ltd.	.12½	Oct. 1	Sep. 14
Do. 6% pf.	1.50	Oct. 1	Sep. 14
McColl-Fron Oil 4% pf	1.00	Oct. 20	Sep. 29
Minas Basin P. & P.	.50	Nov. 1	Oct. 15
Mindustrial Corp.	.02½	Oct. 1	Sep. 14
Minn. & Ont. Pap.	.35	Nov. 1	Oct. 5
J. S. Mitchell	.31¼	Oct. 1	Sep. 15
Modern Cont. A	.25	Oct. 1	Sep. 20
Mtl. City & Dist. Sav.	.45	Oct. 1	Aug. 31
Mtl. Locomotive	.25	Oct. 1	Sep. 17
Mtl. Trust	.35	Oct. 15	Sep. 28
Moore Corp. 7% A & B pf.	†1.75	Oct. 1	Aug. 31
Morrow Screw & Nut 4% pf	1.00	Oct. 1	Sep. 20
Mt. Royal Dairies	.15	Oct. 1	Sep. 1
F. C. Myers Ltd. 5% pf	1.25	Oct. 2	Sep. 28
Do. 5% Jun pf	.0125	Oct. 2	Sep. 28
Nat. Grocers	.15	Oct. 1	Sep. 14

	This payment $	Date payable	Date of record*
West Kootenay 7% pf	1.75	Oct. 1	Sep. 21
West-Ass	.63	Oct. 1	Sep. 21
Western Grocers A	.50	Oct. 15	Sep. 15
Do. 7% pfd.	.35	Oct. 15	Sep. 15
Western Plywood A	.25	Oct. 1	Sep. 17
Do. B	.15	Oct. 15	Oct. 1
Geo. Weston A	.07½	Oct. 1	Sep. 10
Do. B	.07½	Oct. 1	Sep. 10
White Hdwre. 1st pf.	.70	Oct. 1	Sep. 17
Willson Stat.	♦1.00	Oct. 1	Sep. 15
Do. 5% pf.	1.25	Oct. 15	Sep. 30
Wood Alex 6% pf	1.50	Oct. 1	Sep. 14
Wright-Harg. M.	.03	Oct. 1	Aug. 31
Yukon Cons.	.06	Oct. 31	Sep. 28
Zellers Ltd.	.25	Nov. 1	Oct. 1
Do. pf.	.56¼	Nov. 1	Oct. 1

†U. S funds. ‡Extra
*The ex-dividend date is usually at least two full business days prior to the record date
§First following 2-for-1 stk. split.
■—1 com. sh. for ea. 2 com. shs. held.
♦—Initial.
•—First following st. split.
††—First following 4-for-1 stock split.
**—Paid on redesignated shs.
♦♦—Paid on new 6% shs.

Stock Redemptions

Company	Rate	Date	Price
▲McColl Frontenac Oil pfd. shs.	4%	Sep. 30	$102.50

▲—20,000 shs.

Bond Redemptions

Bond Issues	Rate	Year	Date	Cal. Pr.
•Interprov. Pipe Line Co. 1st Mtge. & Coll. Tr. Bds. Ser. C	4%	'73	Oct. 1	$100.00
♦Ontario Steel Products S.F. debs.	5¼%	'68	Oct. 1	$100.00
††Somerville Ltd., 1st Mtge. S.F. Debs., Ser. A		'73	Oct. 15	$102.25
§Steinberg's Ltd. S. F. Debs.	5¼%	'73	Oct. 9	$100.00
■Trs. Mtn. Oil P.L. Co. 1st Mtge. & Conv. Tr. Bds. Ser. A	4½%	'72	Oct. 1	†$102.93
♦Trs. Mtn. Oil P.L. Co. 1st Mtge. & Conv. Tr. Bds. Ser. B	4%	'72	Oct. 1	†$102.93
▲Trs. Mtn. Oil P.L. Co. 1st Mtge. & Conv. Tr. Bds. Ser. C	4%	'72	Oct. 1	†$102.93

††$98,000.
*All outstanding.
†U. S. Funds.
■$250,000.
♦$250,000.
▲$42,000.
♦$125,000.
§$100,000.
‡$74,000. Total S.F. available for this

Company Meetings

Date	Company	Place
Sep. 27	Bowater Corp. of N.A. Ltd.	Montreal
Sep. 28	Calalta Petrol	Calgary
Sep. 28	Celta Dev. & Min. Co. Ltd.	Montreal
Sep. 28	Northland Oils Ltd.	Calgary
Sep. 28	Phillips Oil Co. Ltd.	Calgary
Sep. 28	Power Corp. of Can.	Montreal
Sep. 28	Cdn. Pipelines & Pet. Ltd.	Calgary
Oct. 4	Chromium M & S Corp. Ltd.	Sault Ste. Marie, Ont.
Oct. 5	Lake Lingman G. M. Co. Ltd.	Toronto
Oct. 17	Int. Paper Co.	New York
Oct. 20	T. H. Estabrooks Co. Ltd.	Montreal
Oct. 22	Kerr Lake	New York
Oct. 26	Calgary & Edmonton Corp. Ltd.	Winnipeg
Oct. 26	Continental Can Co. Inc.	New York

Mine and Oil Stocks

Range 1956 High	Low	Div. Rate $	Company	‡ Sales	Last Sept. 14	Week Ending September 21 High	Low	Close
2.04	.71	...	C. Northland	20,800	1.00	1.05	.71	.80
.40	.18	...	C. Pershcourt	9,833	.19½	.20	.18	.20
1.10	.51	...	Con. Que. G.	nil	...	.56	.75	.60
1.10	.40	...	Con. Que. Y.	55,350	1.00	1.00	.83	.95
.59	.22	...	Con. Red Pop.	8,638	.28	.30	.23	.23½
1.39	.45	...	C. Regcourt	490,450	1.17	1.28	.92	1.08
.25	.11	...	Con. San'rm	9,750	.15	.15	.11	.13½
38.00	28.75	.80	Con. Smelt.	27,446	30.62½	31.00	28.75	30.37½
		+*.95						
6.40	3.45	...	Con. Sud'ry	55,205	4.35	4.35	3.75	3.90
.60	.30	...	Con. Thor	17,240	.31	.31	.30	.30
.90	.40	...	Cons. Tung.	10,550	.49	.49	.40	.40
3.25	1.00	...	Con. Potash	3,150	1.25	1.30	1.05	1.05
8.00	5.75	...	Conwest	2,750	6.40	6.70	6.50	6.65
6.65	3.25	...	Copper Cliff	39,504	4.05	4.15	3.60	3.90
3.00	1.25	...	Copper Corp.	22,200	1.60	1.60	1.25	1.42
.71	.39	...	Coppercrest.	18,280	.62	.65	.52	.52
.56	.15	...	Copper Man.	35,250	.18	.18½	.15	.15
.18½	.06	...	Cortez	294,100	.17	.20	.14	.16
2.18	.85	...	Coulee	123,900	1.20	1.15	.85	.91
.29	.16	...	Cournor	3,000	.16	.17	.16	.16
3.10	1.25	...	Cowichan	11,000	1.55	1.54	1.25	1.35
.16	.08	...	Crestaurum	nil	...	.10½	.11½	.11½
.37	.19	...	Croinor	114,300	.33	.34	.26	.30
.10	.05	...	Cron. Bab.	2,000	.08	.07	.07	.07
.72	.25	...	Crowpat	14,999	.31	.30	.25	.25
.39	.15	...	Cusco	22,400	.24	.23	.15	.17
.00¾	.00¾	...	Cryderman.	nil	...	.01	.03½	.00¾
1.28	.30	...	D'Aragon	78,350	.70	.72	.55	.67
1.00	.40	...	Decoursey B.	9,475	.46	.49	.40	.40
.47	.15	...	Do. warr.	24,500	.15½	.18	.15	.18
.85	.40	...	Deer Horn	1,500	.45	.41	.40	.40
.32½	.17	...	D'Eldona	17,900	.21	.20	.17	.17
.88	.70	.04	Deinite	nil	...	.66	.73	.73
1.00	.20	...	Desmond	18,000	.22	.25½	.20	.20
.20	.12	...	Detta Min.	21,500	.14	.14	.12	.12
.93	.25	...	Diadem	156,548	.25	.41	.29	.35
.30	.07	...	Dic'stone C.	5,500	.17	.19	.17	.19
15.87½	13.00	.70	Dome M.	1,985	13.50	13.75	13.00	13.25
.28	.14	...	Dom. Asb.	29,500	.16	.17	.14	.14
.70	.35	...	Donalda	63,500	.46	.48	.35	.42
.09	.04	...	Doreen	7,000	.05	.04½	.04½	.04½
3.05	.51	...	Duvan	101,950	.68	.68	.51	.64
.47	.18	...	Duvex	56,800	.30	.32	.25	.30
1.60	1.00	...	Dyno	23,700	1.07	1.10	1.01	1.03
.13¾	.09	...	East Amph.	10,000	.09½	.09½	.09	.09
2.52	1.51	*.05	East Mal.	19,135	1.60	1.61	1.51	1.55
6.75	5.50	*.30	East Sull.	11,635	5.60	5.80	5.50	5.50
		+.05						
1.60	.70	...	East. Asb.	6,200	.78	.79	.75	.75
1.08	.45	...	East. Metals	50,150	.58	.60	.45	.52
7.70	5.10	...	East Min.	55,267	6.05	6.10	5.10	5.40
.79	.42	...	Elder	5,965	.43	.47	.42	.47
1.80	.40	...	Eldrich	58,700	.62	.65	.40	.47½
1.20	.09	...	El Pen-Rey.	196,020	.54	.52	.43	.49
.35½	.09½	...	El Sol	161,580	.30	.31	.22	.26
.31	.15	...	Emerald	11,300	.17½	.17½	.17	.17
2.35	1.08	...	Eureka	52,950	1.34	1.32	1.13	1.15
1.30	.62	...	Expl. All.	264,560	1.12	1.11	.62	.71
.50	.20	...	Fab. Met.	4,550	.23	.23	.20	.23
44.00	29.00	*.50	Falconbridge	4,618	39.62½	40.00	38.50	39.00
		+.10						
.49	.21	...	Fano	15,500	.29	.30	.23	.23
2.37	1.05	...	Faraday	49,140	1.31	1.34	1.05	1.20
.70	.50	...	Do. warr.	795	.65	.55	.50	.50
.72	.20	...	Farw't Tung.	51,800	.34	.34	.25	.28
.62	.20	...	Federal	14,600	.38	.44	.39	.40
.01½	.00½	...	Flin Flon	5,000	.01	.01	.01	.01
.28	.12	...	Fontana '45.	24,050	.13	.13	.12	.13
.70	.34	...	Forty-Four.	nil	...	.40	....	.40
.28	.07½	...	Francoeur	60,000	.23	.23	.19	.19½
4.75	3.75	...	Frobisher	25,211	4.05	4.50	3.75	3.80
87.00	80.00	...	Do. 4% deb.	292	82.00	83.00	80.00	81.00
.24	.18	...	Fundy Bay.	9,000	.20	.20	.18	.18
.34	.27	...	Gaitwin	7,600	.32	.31	.29	.30
[illegible]	34.00	...	Gaspe Cop.	320	46.00	46.00	46.00	46.00
[illegible]	17.00	...	Geco	11,336	16.50	18.50	17.50	18.00
.64	.32	...	Genex	6,500	.35	.35	.33	.33
3.90	1.40	...	Geo-Scient.	8,500	1.76	1.76	1.40	1.45
1.05	.50	.06	Giant Mas.	22,500	.68	.69	.50	.60
6.30	4.50	*.30	Giant Y'fe	10,680	5.50	5.75	5.35	5.75
1.60	.70	...	Glenn Ur.	95,543	.97	.95	.76	.89
.46	.23	...	Goldale	2,500	.23	.25	.23	.23
[illegible]	.11	...	Gold Crest.	88,200	.16	.15	.11	.15
.13¾	.09	...	Gold Eagle.	3,000	.09½	.09½	.09	.09
.01¾	.00½	...	Gold Lake	nil	...	.01½	.01½	.01¾
5.00	2.00	...	Gold Man.	63,735	2.57	2.60	2.00	2.30
.60	.25	...	Goldfields	1,100	.27	.25	.25	.25
.45	.18	...	Graham B	37,400	.21	.21½	.18	.18½
[illegible]	12.62½	*▲.25	Granby	nil	...	.12½	.13½	12.62½
[illegible]	.25	...	Grandines	64,620	.32	.33	.25	.28
.75	.42	*.02	Grandoro	3,000	.74	.74	.70	.72
9.45	5.25	...	Granduc	2,815	5.70	5.70	5.25	5.50
.22	.14	...	Grandview.	nil	...	.12	.15	.15
.03½	.02	...	Great Falls.	nil	...	.03	.05½	.03
1.09	.35	...	Greyhawk	56,662	.47	.49	.35	.49
.21	.10	...	Gui-Por Ur.	12,500	.11	.10½	.10	.10
1.49	.31	...	Gulch	26,500	.37	.37	.33	.37
.26	.13	...	Gulf Lead	9,950	.14	.14½	.13	.13
20.30	15.25	...	Gunnar G.	25,356	19.00	19.00	17.00	18.00
12.75	8.50	...	Do. warr.	13,710	9.60	9.85	8.60	9.50
.29	.12	...	Gwillim L.	42,600	.16	.17	.12½	.13
.39	.26	...	Haitian	112,400	.29	.35	.28	.30
3.50	3.25	.20	Hallnor	nil	...	3.25	3.50	3.25
.09	.04	...	Hamil.	1,000	.04	.04	.04	.04
.22	.12½	...	Hard Rock	12,200	.15	.14	.12½	.13
1.70	.30	...	Harr. Min.	38,150	.41	.42	.35	.36
.24	.13	...	Hasaga	2,100	.15	.16	.14	.16
.20	.12½	...	H'd of Lakes	7,500	.14	.18	.12½	.12½
2.09	.81	...	Headway	129,570	1.10	1.12	.81	.95
.39	.10	...	Heath	129,100	.27	.27	.17	.22
.15	.05¾	...	Heva G.M.	38,300	.09	.10	.07½	.08
.97	.70	...	High.-Bell	4,400	.85	.87	.85	.85
30.12½	22.37½	.24	Hollinger	6,829	26.00	27.25	25.00	25.37½
10.87½	6.95	...	Hoyle	10,075	7.85	8.00	7.35	7.55
87.50	64.00	*3.75	Hudson Bay	6,964	85.00	85.25	83.00	83.25
		+‡1.00						
.41	.09	...	Hudson R.	116,950	.39	.39	.32	.34
.55	.26	...	Hugh Pam	8,855	.45	.45	.43	.43
.31¾	.09	...	Imperial	4,289	.16½	.16	.12	.15
.86	.15	...	Indian L.	109,350	.24	.25	.21	.24
.07½	.04½	...	Indian M.	9,000	.05	.05	.05	.05
1.74	1.10	...	Inspiration	43,600	1.27	1.35	1.15	1.20
110.37½	78.25	*▲1.95	Int. Nickel	19,856	104.00	104.75	99.00	102.75
131.87½	126.50	▲7%	Do. pfd.	280	128.00	128.12½	126.25	127.50
6.62½	6.25	▲7%	Do. $5 pfd.	nil	....	6.25	6.50	6.25
1.50	.50	...	Int. Ranwick	5,700	.73	.71	.55	.55
3.65	2.30	...	Irish Cop.	10,200	2.55	2.60	2.30	2.40
4.75	2.20	...	Iron Bay	3,650	2.70	2.70	2.20	2.45
.02½	.01	...	Island Lake.	nil	...	.02½	.03	.02½
.35	.21	...	Iso. Uran.	14,000	.23½	.23	.21	.23
1.30	.19	...	Jackson M.	4,219	.25	.20	†.15	.19
.40	.19½	‡▲.01	Jack Waite.	5,700	.23	.21	.20	.20
		+.00½						
.52	.22	...	Jacobus	11,475	.27½	.29	.22	.22
.38	.20	...	Jardun	9,500	.20	.23	.21	.21
1.38	.51	...	Jaye	90,900	.85	.89	.74	.76
.94	.28	...	Jeanette	35,627	.54	.54	.49	.50
....	....	...	Jeep	nil	...	....	....	.22
.28	.09½	...	Jellicoe	140,366	.25	.26	.20	.21½
.34	.12	...	Joburke	41,850	.15	.15½	.12	.14
1.59	.80	...	Joliet Que.	147,350	1.07	1.10	.80	.88
.50	.20½	...	Jonsmith	42,000	.22	.26	.20½	.22
1.39	.85	...	R. J. Jowsey	17,096	1.01	1.05	.85	.90
.12½	.08	...	Kenville	12,033	.09	.09	.09	.09
22.00	17.25	.80	K.-Addison.	3,705	18.00	17.75	17.25	17.50
.94	.40	...	Kerr Lake	nil	...	.50	.68	.60
.13½	.08	...	Keyboycon.	15,525	.08	.09	.08	.08
.90	.50	...	Keymet	1,450	.60	.60	.50	.50
6.10	3.00	...	Kilembe	7,910	3.50	3.55	3.15	3.20
2.20	1.35	...	Do. warr.	18,300	1.50	1.60	1.40	1.46
.95	.32	...	Kirk. H. Bay	67,035	.70	.70	.50	.62
2.09	1.50	...	Kirk. Min.	31,402	1.92	1.95	1.53	1.72
.49	.20	...	Kirk. Town.	2,000	.21	.22	.20	.20
.43	.14	...	Kontiki Ld.	9,000	.16	.16	.15	.15
.05	.02½	...	Koot. Base.	nil	...	....	.04	.03
25.00	18.00	...	Labrador	3,537	20.00	21.00	19.25	20.50
3.75	.55	...	Lk. Cinch	14,300	.75	....	.65	.72
3.55	1.85	...	L. Dufault	38,400	2.35	2.30	1.85	2.00
.25	.13	...	L. Lingman.	25,100	.15	.15½	.14½	.15
.38	.18	...	Lake Osu	1,000	.18	.18	.18	.18
6.00	4.05	‡.10	Lk. Shore	1,092	4.15	4.25	†4.00	4.10
.37	.20	...	Lk. Wasa	6,000	.22½	.23	.22	.23
4.45	2.65	.10	La Luz	400	4.05	4.10	4.00	4.00
3.55	2.60	*.20	Lamaque G.	950	2.80	2.90	2.85	2.85
1.08	.68	*.06	Leitch Gold.	9,000	.90	.90	.85	.86
.41	.12½	...	Lencourt	26,000	.15	.16	.14	.14
.35	.15½	...	Lexindin	12,200	.20½	.20	.15½	.16
.24	.13	...	Lingside	111,100	.15	.15	.13	.14
2.50	.65	...	Lithium	2,700	.70	.78	.70	.70
3.35	1.29	...	Little L.L.	24,760	1.96	1.99	1.76	1.80
.26	.06¾	...	Lomega	80,466	.16	.16	.12	.13
2.18	.91	...	Lorado Ur.	83,168	1.10	1.14	.91	1.05
.40	.20	...	Louvicourt.	17,150	.22	.24	.20	.20½
2.50	1.20	...	Lyndhurst	63,400	1.30	1.57	1.29	1.44
.17½	.08	...	Lynx Yk.	2,000	.09½	.10	.10	.10
2.30	1.85	*.09	Macassa	7,894	1.95	1.95	1.82	1.85
		+‡.03						
1.51	.65	...	MacDonald.	24,100	.78	.80	.65	.66
.24½	.12	...	Macfie	22,700	.15	.14	.12	.12
.62	.32	...	Mackeno	143,160	.52	.53	.43	.46
1.63	1.19	*.05	MacLeod	10,735	1.25	1.34	1.20	1.34
2.70	2.15	*0.05	Mad. R.L.	8,100	2.30	2.35	2.21	2.22
		+0.05						
.21¾	.10	...	Magnet	14,740	.11½	.11	.09½	.10
2.65	1.25	*.05	Malartic G.	6,500	1.40	1.40	1.25	1.35
.41	.19	...	Maneast Ur.	30,160	.23	.26	.20	.23
.49	.17	...	Maralgo	9,725	.30	.28	.24	.24
.35	.14	...	Marcon	33,650	.17	.18	.14	.15
.12½	.08	...	Marcus G.	5,300	.08½	.09	.08	.08
6.20	2.15	...	Maritimes	103,000	2.65	2.73	2.45	2.58
3.50	.40	...	Do. warr. B	46,860	.62	.69	.40	.50
.39	.11	...	Martin McN.	31,200	.13	.13	.11	.11½
.65	.20	...	Massberyle.	nil	....	....	....	.25
.95	.60	...	Matachewan	nil	...	.60	1.10	.63
2.20	.88	...	Maybrun	1,423,020	1.15	1.15	.95	1.01
96.50	79.87½	2.00	McIntyre	1,170	83.00	84.00	81.50	82.00
		+*1.00						
.45	.30	...	McK. R.L.	12,205	.34	.34½	.30	.31
.35	.12	...	McMarmac.	16,180	.12	.14	.12	.13
.70	.26	...	McWatters	12,000	.35	.37	.26	.34½
1.37	.45	...	Mentor Exp.	24,100	.56	.65	.47	.60
.56	.25½	...	Mercedes	10,602	.48	.48	.40	.40
4.65	2.05	...	Merrill Is.	173,250	2.71	2.75	2.05	2.43
.47	.21	...	Meta Ur.	49,100	.25	.26	.21	.22½
3.20	.81	...	Midrim	134,850	1.58	1.63	1.40	1.54
1.07	.45	...	Midwest	5,300	.74	.75	.70	.71
2.80	1.15	...	Milliken L.	105,200	1.43	1.50	1.15	1.32
.42	.17	...	Mindamar	4,600	.22	.21	.17	.17
30.37½	22.25	*.50	Mng. Corp.	1,967	25.00	25.00	24.00	24.25
		+‡.25						
.96	.45	...	Min-End	15,840	.50	.54	.45	.45
1.00	.20	...	Min-Ore	12,814	.24½	.25	.20	.21
1.40	.66	...	Mogador	15,300	.80	.80	.70	.70
2.95	2.70	...	Mogul	74,125	3.20	3.20	2.70	2.90
1.74	1.10	...	Molyb'nite	3,200	1.15	1.10	1.10	1.10
.90	.66	*.05	Moneta	8,500	.66	.71	.66	.66
6.25	2.00	...	Montgary	35,950	2.57	2.65	2.30	2.35
.11½	.06½	...	Montpas	9,000	.08	.08	.07½	.07½
1.83	1.10	...	Multi-Min	34,100	1.25	1.25	1.10	1.10
2.15	.85	...	Nama Cr.	18,330	1.01	1.03	.85	.95
1.47	.47	...	Nat. Ex.	28,000	.56	.58	.47	.50
.45	.22	...	Nello Min.	14,000	.22½	.24	.22	.22
4.10	1.00	...	Nesbitt L.	38,300	1.25	1.35	1.00	1.17
.41	.15	...	N. Alger	48,500	.16½	.17	.15	.15
.93	.50	...	N. Athona	27,166	.75	.79	.65	.69
.31	.14	...	N. Bidl'e	7,125	.16½	.17	.14	.14
1.30	.60	...	N. Calumet.	16,970	.60	.65	.60	.65
1.15	.51	...	N. Delhi	83,600	1.01	1.01	.51	.54
2.06	1.50	*.05	N. Dick'n	2,800	1.57	1.61	1.51	1.52
.85	.08	...	N. Forma'e	341,200	.57	.66	.48	.57
.63	.21	...	N. Fortune.	90,740	.33	.34	.26	.28
.36	.17	...	N. G'dvue	14,300	.20	.21	.17	.21
.40	.19	...	N. Har'na	11,825	.21	.22	.19	.20½
1.19	.50	...	N. H'ridge	79,400	.62	.62	.51	.56
.50	.19	...	N. Hosco	9,350	.19	.26	.20	.20
.70	.14	...	N. Jack Lk.	52,300	.70	.70	.48	.64
.54	.16	...	N. Jason	41,000	.18	.20	.17	.17½
.33	.16	...	N. Kelore	34,200	.22	.24	.16	.17
8.65	4.50	...	Newkirk	7,200	5.65	5.65	5.25	5.50
.89	.35	...	N. Lafayette	10,000	.40	.38	.38	.38
1.14	.37	...	Newlund	35,380	.41	.43	.37	.39½
2.55	.70	...	N. Man.	19,500	1.15	1.20	1.00	1.10
.98	.23	...	N. Minda-S.	48,850	.40	.48	.34	.44
.27	.13	...	N. M'l'que	20,700	.15½	.15½	.13	.13
.17	.11	...	Newnorth	10,400	.15½	.13½	.12	.14
2.05	1.43	...	N. Pac Coal	3,200	1.80	1.80	1.80	1.80
.31½	.15	...	N. Rouyn	5,150	.17	.16	.15	.15½
7.60	2.38	...	N. Royran	142,229	4.10	4.15	3.60	3.95
.16	.09	...	N. Santiago.	20,500	.13½	.14	.13½	.13½
.20	.08	...	N. Senator	37,300	.09	.09	.08	.08
.37	.22½	...	N. Taku	3,000	.24	.24	.23	.23
.35	.13	...	N. Thurbois	25,500	.14½	.14	.13	.13
1.00	.10	...	N. Vinray	25,000	.11	.12	.10	.10
5.05	1.37	...	Nickel Rim.	60,377	4.10	4.16	3.70	3.95
5.35	2.57	...	Nipissing	6,550	3.75	3.70	3.45	3.50
.43	.09	...	Nisto	31,000	.14	.15	.12	.12
.15	.10	...	Nocano	1,000	.11	.10	.10	.10
1.46	.43	*.01½	Nor-Acme	88,100	.75	.71	.43	.54
66.62½	51.50	2.00	Noranda	5,406	61.75	62.00	58.75	60.50
.58	.15	...	Norgold	15,000	.17	.17	.15	.15
.17	.10	...	Norlartic	21,225	.14	.14	.13	.13
7.90	6.60	*.45	Normetal	4,710	6.95	7.00	6.75	6.90
2.00	.46	...	Norpax	772,605	1.87	1.95	1.60	1.72
.14¾	.07	...	North Inca.	35,100	.08	.08	.07	.07½
1.67	.80	...	N. Rankin	214,350	1.38	1.48	1.21	1.32
2.00	.36	...	North Can.	16,700	1.30	1.25	1.01	1.25
5.05	3.15	...	North-Span	79,975	4.40	4.45	3.85	4.20
.51	.20	...	N.W. Vent.	4,500	.25	.23	.20	.22
.85	.30	...	Norvalie	15,000	.37	.38	.30	.30
.10	.03	...	Nuclear	nil	...	.03½	....	.03½
.85	.37	...	Nudulama	15,550	.40	.42	.37	.39
.75	.30	...	Obalski	27,900	.40	.39	.35	.38
.27	.09	...	Obaska	13,100	.09½	.09½	.09	.09½
1.30	.68	*.02	O'Brien	6,850	.83	.82	.70	.73
.41	.11½	...	Ogama	75,700	.26½	.28	.24½	.26
1.30	.70	...	Oka	13,800	.75	.80	.70	.80
.45	.30	...	O'Leary	20,552	.25	.24	.20	.21
.12	.04	...	Omnitrans	32,600	.08	.08	.07½	.08
1.02	.48	...	Opemisca	24,700	.68	.65	.56	.59
19.87½	8.20	...	Opemiska	32,827	14.50	14.75	13.00	14.75
.27	.16	...	Orchan	2,000	.20	.18	.17	.17
.57	.20	...	Orenda	58,300	.33	.34	.24	.31
.94	.40	...	Ormsby	65,725	.47	.53	.42	.43
.63	.35	...	Osisko	36,150	.40	.38½	.35	.36
.16	.11	...	Pac. East.	13,433	.12½	.12	.11	.11
.62	.27½	...	Pac. Nickel.	7,475	.55	.54	.46	.54
.02½	.01½	...	Packsack	5,000	.01½	.01½	.01½	.01½
.78	.49	...	Pamour P.	14,392	.54	.52	.49	.49
.23	.09½	...	Paramaque	33,000	.13	.13	.11	.11
.19	.10	...	Parbec	22,200	.10½	.11	.10	.10½
1.53	.65	...	Pardee	24,270	.75	.71	.65	.65
1.90	.71	...	Pater	7,700	.90	.85	.71	.77
6.75	4.65	*.10	Pato Cons.	2,880	4.75	4.80	†4.60	4.60
		+.75						
.39½	.25	‡.01½	Paymaster	71,824	.27	.28	.25	.25
.15½	.15½	...	Pegasus	nil	...	....	....	.15½
5.15	3.60	‡1.25	Pend Oreille	1,800	3.75	3.90	3.80	3.80
.34	.25	...	Perron Gold	4,200	.26	.26	.25	.25
2.25	1.25	.10	Pickle Crow	14,676	1.32	1.35	1.25	1.30
2.10	1.65	*.12½	Pioneer G.	3,225	1.70	1.75	†1.55	1.70
.18	.10	...	Pitch-Ore	63,400	.11	.13	.10	.11
.36	.15	...	Pitt G.	47,900	.18	.18	.17	.17
14.87½	12.00	*.50	Placer Dev.	12,571	13.25	13.75	13.00	13.25
.33	.12	...	Porc. Prime	13,000	.15	.14	.12	.13
1.43	.27	...	Portage	52,400	.75	.81	.65	.74
.68	.50	1.20	Powell R.	6,100	.50	.50	.50	.50
		+*.30						
.23½	.05½	...	Prem. Bord.	25,200	.17	.16	.13	.15
8.30	5.60	.08	Preston E.	5,580	6.40	6.65	6.15	6.20
9.40	4.75	...	Pronto	3,355	†5.00	5.25	4.75	5.00
5.40	1.40	...	Do. warr.	2,089	1.80	1.80	†1.25	1.40
2.55	1.50	...	Prospectors.	50,250	1.85	1.80	1.66	1.75
.45	.15	...	Purdex	15,000	.23	.25	.22	.22
.90	.36	...	Quatsino	18,000	.53	.57	.51	.53
4.85	1.65	■	Que. Chib.	122,642	2.12	2.20	1.92	2.15
3.50	1.50	...	Que. Cop.	17,800	1.60	1.65	1.50	1.60
.32	.09½	...	Que. Lab.	78,500	.16½	.16	.14	.14
15.00	9.85	...	Que. Lith.	5,360	10.75	12.25	10.25	10.50
1.94	.80	...	Que. Man.	16,300	.90	1.00	.80	.98
4.60	2.75	...	Que. Met.	16,480	3.00	3.00	2.75	2.75
1.35	.44	...	Que. Smelt.	394,900	1.22	1.21	.88	.96
.30	.19	...	Queenston C.	5,600	.20	.21	.19½	.20
30.00	23.00	*1.50	Quemont	3,852	24.50	25.00	23.00	23.50
1.80	.95	...	Radiore	61,150	1.10	1.10	.95	1.09
2.50	1.30	...	Rainville	8,100	1.66	1.72	1.48	1.65
6.05	1.70	...	Rare Earth.	19,800	1.95	1.95	1.75	1.90
2.85	1.30	...	Rayrock	47,775	1.59	1.60	1.30	1.45
.05	.02	...	Red Cloud	nil	..	.02½	.03	.03
.39	.13½	...	Red Crest	172,700	.29	.29	.24	.27
.15	.03½	...	Red Hawk	33,500	.10	.10	.09	.09½
2.70	1.90	*.12½	Reeves McD.	200	1.92	2.00	2.00	2.00
2.60	2.25	*.15	Renabie	400	2.30	2.25	2.25	2.25
.75	.19	...	Rexspar	43,700	.45	.43	.33	.41
.08	.01½	...	Rice Lake	nil	...	.02	.05	.04
.34	.17	...	Rio-Rup.	23,166	.20	.19½	.17	.17
1.20	.68	...	Rix-A'basca	9,425	.70	.72	.68	.69
.26	.14	...	Roche L.L.	22,830	.14½	.14½	.14	.14
.70	.20	...	Rockwin	10,868	.26	.26	.20	.25
.24½	.12	...	Rowan Con.	17,000	.14	.14	.12	.12½
.24	.14	...	Ryanor	1,000	.16	.15	.15	.15
1.19	.26	...	St. Michaels	57,300	.31	.31	.26	.28
1.47	.75	‡.06	San Antonio	5,505	.80	.84	.75	.78
.30	.11	...	Sand River.	47,800	.20	.21	.19	.19
....	....	...	Scotia Gold.	nil	..	.00½	....	.01½
.29	.09	...	Shawkey '45	34,000	.16	.17	.12	.14
2.25	1.25	*.05	Sheep Creek	2,500	1.25	1.35	1.25	1.25
10.37½	7.75	...	Sherritt G.	42,835	8.45	8.55	7.90	8.20
5.40	4.55	.40	Sigma Mines	300	4.85	4.85	4.80	4.80
.27	.11	...	Silanco	20,200	.12	.13	.11	.11
.25	.12	...	Silbak Prem.	10,775	.24	.24	.22	.23
1.70	.93	*.03	Silver M.	28,725	1.13	1.17	1.00	1.05
.37	.06	...	Silver R.	24,500	.08½	.08	.06	.08
.80	.35	‡.02	Silver Std.	11,600	.50	.51	.35	.50
1.16	.52	*.01½	Siscoe	22,625	.85	.89	.80	.80
.47	.15	...	Skeena	27,600	.16	.18	.17	.18
.31	.17	...	Slocan Duv.	18,734	.24	.22	.17	.18
.16	.08	...	Soma Duv.	3,500	.09½	.10	.09	.09
.61	.15	...	South Duf.	1,500	.17	.15	.15	.15
.20	.03	...	Spud Valley	8,000	.17	.14	.12	.14
.55	.28	*.02	Stad'n '44	24,283	.28	.29	.28	.28½
.45	.25	...	Standard G.	4,500	.28	.29	.26	.26
3.15	2.35	...	Stanleigh	8,020	2.80	2.75	2.35	2.40
.02	.00¾	...	Star Lake	nil	...	.01	.02	.00¾
.90	.42	...	Star. Uran.	11,400	.83	.90	.82	.85
.20¾	.06½	...	Starrat O.	28,500	.10	.10	.09½	.09½
.18	.09	...	Steeloy	10,800	.10	.10	.09	.09
24.75	15.00	...	Steep Rock.	25,760	21.62½	22.12½	20.50	21.00
1.20	.56	...	Sturgeon R.	31,900	.63	.66	.56	.58
.22½	.14	...	Sudbury C.	15,600	.16	.18	.15	.15
6.70	4.30	*.12	Sullivan C.	10,606	4.55	4.60	4.30	4.35
		+.02						
.40	.25	...	Sunshine	6,496	.31	.32	.30	.31
1.85	1.02	...	Surety	13,500	1.08	1.10	1.04	1.10
.20	.08	...	Surf Inlet	13,000	.09	.10	.08½	.10
1.43	1.10	.08	Sylvanite	6,025	1.20	1.20	1.10	1.15
.72	.21	...	Tache Lake.	162,200	.55	.56	.43	.47½
.14½	.09	...	Tandem	24,366	.11	.11	.09	.10
.45	.20	...	Tarbell	2,500	.28	.30	.28	.28
.47	.38	...	Taurcanis	7,375	.38	.44	.38	.38½
.28	.20	...	Taylor B.	nil	...	.22	.24	.22
.26	.11	...	Tazin	10,000	.12	.12	.11	.11½
2.75	1.80	.15	T.-Hughes	15,650	1.90	1.86	1.80	1.84
9.00	2.25	...	Temagami	8,610	6.10	6.25	5.00	5.00
3.00	1.31	...	Thompson	10,920	1.50	1.50	1.45	1.50
.54	.16	...	Tiara	13,266	.18	.20	.16	.16
.85	.12½	...	Tiblemont	12,550	.50	.50	.50	.50
.58	.32	...	Tombill	4,400	.40	.40	.36	.35
1.25	.63	‡.08	Torbrit S.	1,200	.65	.65	.65	.65
4.10	2.15	...	Torbrook	10,350	3.90	3.95	3.70	3.95
.32	.12	...	Towagmac	3,000	.17	.16	.12	.12
2.50	1.45	...	Tr. Can. Ex.	3,600	1.68	1.65	1.45	1.60
.53	.32	...	Trans. Res.	8,516	.34	.34	.32	.32
.70	.19	...	Trebor	37,400	.40	.40	.33	.40
.47	.32½	...	Trinity	2,275	.38	.38	.32½	.32½
2.65	.30	...	Trojan	91,900	.64	.63	.45	.49
.37	.20½	...	Union Min.	8,599	.22	.22	.21	.21
8.60	6.50	...	United Asb.	11,065	6.90	7.00	6.50	6.80
.36	.16	...	Un. Estella	12,409	.18	.18	.16	.17
8.00	6.00	*.40	Un. Keno.	2,025	6.30	6.50	6.00	6.00
		+.15						
.40	.19	...	Un'd Mont.	14,000	.20	.20	.19	.19
1.34	.84	*.02½	Upper Can.	35,129	.94	.90	.84	.89
.10	.01	...	Utica	3,500	.05	.05	.04	.04
.48	.21½	...	Valor	27,200	.25	.28	.21½	.22
.12½	.02½	...	Van'da '48	16,500	.05	.05	.04½	.05
49.00	35.50	*.40	Ventures	4,742	41.00	41.50	39.75	40.75
1.92	.25	...	Vico	187,180	.33	.34	.25	.29
3.40	1.70	...	ViolaMac	22,300	2.05	2.05	1.70	1.85
3.10	1.98	...	Virginia	11,900	2.29	2.34	2.05	2.34
15.25	13.75	1.40	Waite Am.	1,977	14.00	14.37½	13.75	14.00
.80	.43	...	Weedon Pyr.	31,800	.52	.51	.47	.48
.14¾	.07	...	Wendell	22,100	.08	.08	.07	.08
.75	.38	...	Werner Lk.	44,900	.40	.45	.38	.39
.65	.40	...	West Ex.	nil	...	.58	.60	.60
.31	.08½	...	West Mal.	23,000	.15	.15½	.12	.14
.45	.14½	...	Westville	94,800	.29½	.31	.26	.27
3.40	2.17	...	Willroy	21,240	2.90	2.97	2.55	2.69
.17½	.10	...	Wiltsey C.	25,700	.15	.16	.14	.15
.16½	.09½	...	Winchester.	11,000	.10½	.10	.09½	.09½
.52	.18	...	Windw'd	12,500	.23	.24	.18	.19
.08	.03½	...	Wpg. R. Tin	10,000	.05	.05½	.05	.05
2.07	1.65	.12	Wright-Har.	3,090	1.71	1.75	1.65	1.65
.55	.30	*.02	Yale Ld.	6,500	.32	.34	.30	.30
.21	.10	...	Yellorex	32,500	.14	.16	.14½	.15
3.00	1.98	*.06	Y'ke Bear	22,331	2.12	2.13	1.98	2.04
.14	.09½	...	Yukeno	17,520	.10	.10½	.09½	.09½
.72	.57	*.08	Yukon Con.	26,500	.67	.65	.65	.65
.70	.30	...	Zenmac	17,800	.32	.33	.30	.31
.60	.36	...	Zulapa	3,000	.45	.45	.45	.45

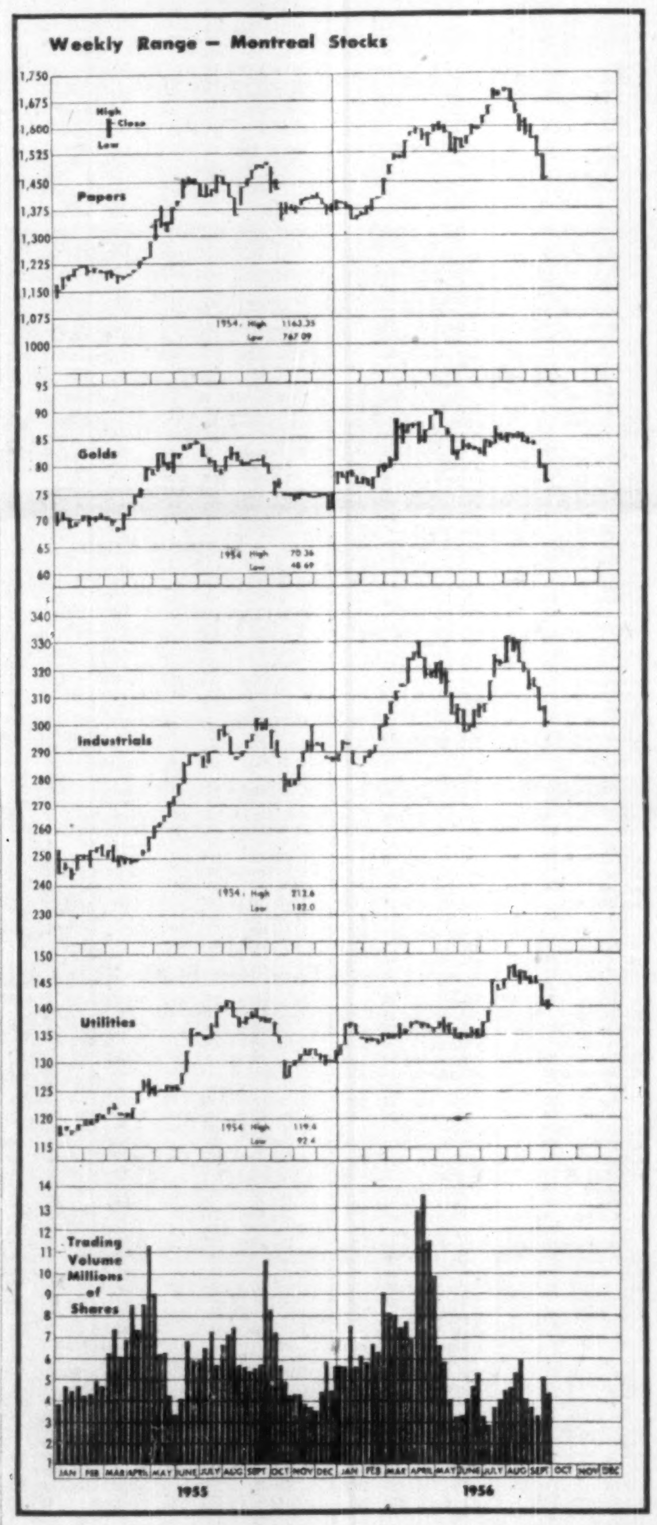
Oil Stocks

Range 1956 High	Low	Div. Rate $	Company	‡ Sales	Last Sept. 14	Week Ending September 21 High	Low	Close
.33	.17	...	Acme G&O.	8,700	.19	.20½	.18½	.20½
1.07	.62	...	Ajax	7,100	.95	.96	.88	.90
.06	.03	...	Albedina	nil	...	.03	.04½	.03½
.66	.29	...	Alta. P. Con.	3,800	.53	.50	.46	.50
.06	.02½	...	Aldina	nil	...	.04½	....	.03½
.35	.22	...	Altex	4,000	.30	.30	.27	.27
.07	.03½	...	Amalta	nil	...	.03½	.04	.04
1.50	.77	...	Am. Leduc	265,791	1.14	1.15	.93	1.05
1.00	.80	...	Amos	2,500	1.00	.98	.98	.98
7.40	5.60	...	Amurex	1,100	7.00	6.90	6.85	6.80
.25	.08½	...	Anchor	57,600	.15	.16½	.14	.14
16.87½	12.75	...	Anglo-Am.	520	15.00	14.50	13.62½	13.75
.25½	.11	...	Apex	81,000	.16	.15½	.14	.14½
20.00	8.80	...	Bailey-Sel. A	10,830	18.50	19.12½	17.50	17.87½
40.00	25.00	1.25	Do. 5% deb.	1,230	36.00	38.00	36.00	36.00
4.20	1.16	...	Banff	13,375	3.55	3.60	3.00	3.35
.10	.04	...	Barons	3,000	.04¾	.04½	.04½	.04½
.67	.50	...	Basco	1,800	.50	.50	.42	.43
.18	.09	...	Bashaw	3,000	.16	.16	.16	.16
.19	.12	...	Bata	19,500	.13	.14	.12	.12½
.40	.19	...	Blue Crown	3,330	.25	.25	.23	.24
.68	.45	...	Bonnyville	19,733	.50	.49	.43	.45
1.45	.98	...	Bralsaman	2,800	1.10	1.10	1.02	1.02
4.30	2.31	...	Britalta	10,115	3.35	3.25	2.85	2.92
.11	.06	...	Br. Pete.	1,000	.06½	.06½	.06	.06½
1.95	1.35	...	Cabanga	3,680	1.85	1.85	1.75	1.75
1.60	.54	...	Calalta	12,630	1.40	1.41	1.35	1.40
33.00	19.37½	.10	Calg. & Ed.	5,130	29.25	29.75	28.25	28.75
6.75	5.00	...	Calvan	200	5.00	5.00	5.00	5.00
4.00	1.90	...	Canada Oil L.	9,600	2.95	3.05	2.95	3.00
2.25	.92	...	Do. warr.	1,000	1.85	1.85	1.70	1.70
.74	.40	...	Canadian Ad.	13,333	.52	.57	.52	.53
.44	.13	...	Cdn. Ana'da	13,386	.32	.35	.30	.35
9.00	5.65	...	Cdn. At'la'c	11,448	7.15	7.35	6.75	7.05
.95	.55	...	Cdn. Br. E.	8,440	.63	.62	.58	.59
.80	.30	...	Cdn. Dec. warr.	3,000	.60	.64	.60	.61
9.35	2.90	...	Cdn. Dev.	75,340	6.90	7.05	6.00	6.50
.10½	.05	...	Cdn. Emjay	5,500	.05½	.06	.05	.05
7.50	5.25	...	Cdn. Ex. G.	3,263	5.90	6.25	5.90	6.00
.35	.16	...	Cdn. F'tune	4,500	.17	.20	.17	.20
2.70	1.90	...	Cdn. H'stead	14,413	2.30	2.30	2.00	2.10
4.00	2.74	...	Cdn. PL&P	41,192	3.80	3.90	3.65	3.70
6.50	4.20	...	Cdn. Prosp.	400	5.25	5.25	5.00	5.00
4.50	2.65	...	Cdn. Wil'ston	200	3.30	3.30	3.30	3.30
2.15	1.50	...	Canadusa	7,654	1.60	1.60	1.60	1.60
1.85	1.00	...	Canso Gas	7,242	1.80	1.78	1.60	1.60
6.25	1.57	...	Canso Pet.	4,711	5.40	5.45	5.00	5.10
3.20	1.89	...	Canso Prod.	2,836	2.71	2.84	2.65	2.65
1.25	.55	...	Canso Warr.	905	1.20	1.15	1.10	1.15
.57	.30	...	Carleton	14,300	.57	.52	.50	.51
.35	.10	...	Castle O&G	5,206	.21	.21	.17	.19
6.00	3.95	...	Cent. Expl.	2,600	4.00	4.00	3.95	4.00
6.00	2.11	...	Cent. Leduc	27,722	4.90	5.05	4.50	4.85
.65	.20	...	Century	45,250	.40	.39½	.36	.39½
2.50	1.68	...	Charter	10,000	2.10	2.15	2.00	2.00
.32	.16	...	Claybar	3,800	.16	.20	.16	.20
....	....	...	Coastal	nil	...	.70	....	†.85
.88	.75	...	Com. Min'ls	21,200	.88	.88	.84	.88
1.25	1.00	*.08	Command	nil	...	1.06	....	1.07
4.10	3.35	*.20	Commoil	nil	...	....	....	3.90
5.50	4.10	‡.35	Common P.	100	5.00	5.00	5.00	5.00
.23	.15	...	Con. Allen.	9,320	.16	.17	.15	.15
.40	.25	...	Con. Cord.	1,000	.26	.26	.26	.26
.78	.35	...	Con. Dragon	65,944	.77	.77	.63	.70
.85	.60	...	Con. East C.	500	.65	.60	.60	.60
.08½	.03	...	Con. Gr. C.	1,823	.05	.05	.04½	.05
5.40	2.50	...	C. Mic Mac.	35,715	5.15	5.35	5.00	5.15
.19¾	.10	...	Con. Peak	12,534	.14	.14	.11	.12
15.15	6.65	...	Con. W. Pet.	3,125	10.62½	11.00	10.00	10.50
6.60	3.90	...	Cree Oil	7,345	5.95	6.00	5.35	5.75
3.00	2.50	...	Do. warr.	nil	...	....	....	2.50
.29	.17	...	Dalhousie	19,500	.22	.22	.21	.22
4.90	1.42	...	Del Rio	90,688	3.85	3.90	3.45	3.85
1.99	1.45	...	Dev. Leduc.	15,800	1.61	1.67	1.50	1.50
10.00	5.50	...	Dome	1,520	8.50	8.50	8.10	8.10
.17	.08¾	...	Dom. Min.	8,000	.09½	.09½	.09	.09½
.65	.10	...	Dubar	7,200	.24	.25	.22	.25
2.10	.60	...	East. Can.	6,600	1.10	1.10	1.00	1.01
.17	.09	...	Edoran	9,500	.10	.09¾	.09½	.09½
.55	.28	...	Emp. Oil	31,400	.33	.33	.30	.30
3.60	1.90	...	Fargo	6,600	2.85	2.90	2.65	2.85
3.40	.40	...	Ft. St. John	6,400	2.90	3.25	2.85	3.25
.04½	.01½	...	Freehold	8,100	.02½	.03½	.03	.03½
.65	.29	...	Futurity	14,500	.37	.37	.32	.35
.72	.10	...	Gaspe	20,200	.18	.16	.16	.16
.11	.06	...	Gateway	8,500	.06½	.08	.06	.08
7.00	4.70	.20	Gen. Pet.	450	5.60	6.00	5.50	5.50
7.00	4.65	.20	Do. A	3,350	5.60	6.15	5.50	5.75
.11	.06	...	Golden Sp.	5,000	.07¾	.07½	.07½	.07½
54.50	25.75	...	Gt. Plains	1,700	45.00	44.50	42.00	43.87½
5.85	3.00	...	Gt. Sw't Gr.	104,815	3.15	3.45	3.00	3.25
13.25	9.00	...	Gridoil	20	11.25	12.00	12.00	12.00
.05½	.03	...	Hargal	3,550	.03½	.04½	.03	.03
.24	.11	...	Henderson	1,000	.11	.12	.12	.12
.50	.19	...	High Cr't.	20,900	.38	.40	.35	.38
.58	.12	...	High Sarcee	21,100	.37	.39	.35	.37
11.60	7.00	*.30	Hi-Tower	300	10.25	9.75	9.75	9.75
16.50	10.25♦♦	*.12½	Home A	6,367	13.62½	14.00	13.00	13.50
15.87½	10.12½	...	Do. B	5,006	13.00	13.75	12.25	12.50
14.00	8.35	...	Husky	5,170	12.75	13.25	12.50	13.00
7.20	3.40	...	Do. warr.	1,600	6.75	6.90	6.35	6.60
2.00	.72	...	Israel Cont.	700	.90	†.85	.72	.72
.25	.16½	...	Jump. Pound	1,000	.19½	.20	.20	.20
3.10	2.00	...	Jupiter	7,900	2.20	2.21	2.00	2.08
.41	.04½	...	Kenare	11,800	.19	.18	.17	.19
.39	.18	...	Keno	500	.20	.18½	.18½	.18½
2.75	1.10	...	Kroy	68,850	2.20	2.45	2.09	2.45
.40	.19	...	Leduc Cal.	5,200	.20	.21	.20	.21
3.65	2.45	...	Liberal	30,700	2.70	2.75	2.45	2.60
.24	.10	...	Long Is. P.	11,400	.17	.16	.13	.14
.47	.24	...	Marigold	14,700	.31	.33	.30½	.31
.06	.02	...	Marvel	4,000	.06	.05	.05	.05
3.50	3.35	...	Medallion	785	...	3.50	3.35	3.50
.84	.18	...	Merland	33,800	.68	.68	.65	.68
22.50	11.75	...	Merrill Pet.	1,716	16.75	16.75	15.37½	16.75
1.50	.75	...	Midcon	126,460	1.31	1.32	1.13	1.20
.45	.23	...	Mill City	15,053	.30	.32	.29	.31
3.20	.60	...	Mollusca	300	1.85	1.85	1.85	1.85
.36	.12	...	Monarch	7,500	.29	.28	.25	.25
6.95	3.10	...	Nat. Pet.	1,850	4.85	4.80	4.50	4.50
2.08	1.01	...	N. Bristol	8,200	1.14	1.16	1.06	1.13
3.25	2.01	...	N. British	11,040	2.45	2.45	2.25	2.25
2.52	1.50	...	N. Chamb'n	86,925	2.30	2.52	2.34	2.45
.59	.35	...	N. Concord.	1,500	.40	.35	.35	.35
.90	.62	...	N. Cont.	48,725	.81	.80	.68	.69
.35	.16	...	N. Davies	11,700	.23	.25	.22	.24
2.15	1.48	...	N. Gas Expl.	9,350	1.56	1.65	1.50	1.50
.10½	.06½	...	N. Ranch.	5,200	.09¾	.09¾	.06½	.09¾
.35	.11	...	N. Richfield	10,925	.11	.14½	.12	.14½
.23	.07½	...	N. Springer.	23,539	.17	.20	.17	.19
3.00	2.15	...	N. Superior.	5,200	2.50	2.47	2.30	2.30
.50	.06½	...	N. World	nil	...	....	....	.06½
.40	.18	...	Nordon	500	.18	.19	.19	.19
1.59	1.10	...	Northcal	8,225	1.35	1.39	1.10	1.39
7.35	4.50	...	North Can.	2,740	6.60	6.80	6.10	6.40
40.00	35.87½	...	Do. 5½% pf.	260	37.50	37.00	36.00	37.00
4.00	1.75	...	Do. warr.	710	3.35	3.20	3.00	3.00
.04	.02	...	N. Cont.	2,000	.03	.03	.03	.03
1.31	.55	...	Northland	36,000	.92	.92	.82	.87
.47	.30	...	Nucco	2,825	.34	.35	.30	.31
.23	.08	...	Oil Select	187,734	.12½	.14	.12	.13
3.25	1.77	...	Okalta	39,800	2.80	2.90	2.50	2.75
20.12½	12.62½	...	Pac. Pete.	11,320	17.50	17.62½	16.50	17.00
....	....	...	Pan Israel	nil	...	....	....	2.65
.43	.27	...	Pan West	25,600	.30	.32	.29	.29
6.75	4.75	*.35	Parker Drill	350	6.00	6.00	5.87½	6.00
1.94	.75	...	Pathfinder	68,684	1.55	1.58	1.35	1.40
13.00	7.85	...	Peace River	3,150	10.62½	10.62½	9.75	9.75
2.40	1.90	...	Permo	169,224	2.11	2.20	1.90	2.03
3.40	1.75	...	Peruvian	8,400	1.90	2.00	1.75	1.79
2.25	.99	...	Petrol O.	38,200	1.20	1.30	1.10	1.35
1.95	.75	...	Phillips Oil.	8,000	1.45	1.49	1.35	1.35
.89	.60	...	Ponder	6,400	.73	.70	.64	.64
.62	.23	...	Pontiac	500	.25	.27	.27	.27
.36	.25	...	Poplar	500	.33	.27	.27	.27
6.90	3.30	...	Prairie	1,800	4.55	4.45	4.25	4.25
2.74	1.75	...	Provo	49,725	2.10	2.20	1.75	1.95
.30	.06	...	Que. Oil Dev.	36,000	.10	.10	.06	.09
.76½	.28	...	Quinalta	3,000	.39	.41	.41	.41
.08	.02¾	...	Realty	31,000	.04	.04	.03½	.04
.27	.08½	...	Reef Expl.	24,254	.14½	.15	.12	.12
.07	.03	...	Renfrew	nil	...	.04	.06	.05
.25	.15	...	Ridgeway	56,925	.19	.17	.15	.16
2.65	1.70	...	Rio Palmer.	15,161	2.06	2.03	1.85	1.85
.18	.10	...	Roxana	5,200	.11½	.11½	.11	.11
.12½	.07	...	Royal Can.	6,000	.09	.09	.08½	.08½
18.25	12.50	.26	Royalite	8,829	16.25	16.12½	15.25	15.50
31.75	25.00	1.31¼	Do. 5¼% pf.	125	30.00	30.00	29.25	29.25
.15	.07	...	Sage	3,000	.12	.13	.13	.13
3.90	1.90	...	Sapphire	27,750	2.20	2.22	1.90	2.00
157.00	75.00	...	Do. 5% debs.	290	90.00	90.00	75.00	85.00
3.90	1.75	...	Scurry-Rain.	99,950	3.70	3.80	3.35	3.65
5.10	2.55	...	Security	8,705	4.00	4.10	3.70	3.90
.20	.10	...	Select Oils	nil	...	.11	.13	.10
.12	.07	...	Share Oils	480	.10	.09½	.09	.09
.27¾	.12½	...	Silver City	3,000	.12½	.14	.13	.14
.45	.22	...	Souris Val.	4,500	.28	.26	.22	.22
.50	.30	...	So. West Pete.	nil	...	.40	....	.50
.90	.43	...	So. Union	16,100	.56	.56	.45	.46
.43	.20	...	Sparmac	9,600	.23	.24	.20	.20
.60	.16½	...	Spooner	17,500	.37	.39	.30	.35
.89	.55	...	Stanwell	14,696	.85	.76	†.30	.69
.25	.09¾	...	Sturgeon	1,500	.13	.13	.13	.13
1.33	.75	...	Texas Cal.	1,500	.82	.78	.75	.77
2.70	1.60	...	Trans. Emp.	10,687	2.40	2.40	2.12	2.20
.54	.30	...	Trans-Era	56,950	.35	.36	.30	.33
.09	.04½	...	Transfield	6,000	.05	.05	.04½	.04½
.22	.11½	...	Trend	35,500	.14	.14½	.11½	.11½
12.00	5.50	...	Triad	19,825	10.12½	10.37½	9.85	9.95
.18	.05½	...	Tri-Zone	2,000	.06½	.07½	.07½	.07½
.35	.27	...	Turner V.	500	.32	.32	.32	.32
2.98	1.65	...	United Oils.	83,450	2.20	2.31	2.02	2.15
.40	.15	...	Vanalta	15,900	.40	.39	.34	.34
.60	.20½	...	Vandoo Con.	144,550	.25½	.27	.20½	.21
2.35	.82	...	Van Tor	17,100	1.68	1.72	1.68	1.68
.90	.51	...	Vulcan	3,000	.68	.68	.64	.64
.40	.22	...	Wespac	53,423	.33	.34	.29	.30
1.00	.59	...	W'burne	16,100	1.00	1.00	.95	.95
.18	.11½	...	W. Ashley	9,000	.14	.14	.11½	.11½
2.19	1.30	...	W. Decalta	32,903	1.81	1.80	1.58	1.70
.60	.20	...	Do. B warr.	5,900	.49	.45	.40	.40
8.00	5.00	...	W. L'holds	225	6.10	6.10	6.10	6.10
1.70	1.30	...	W. Maygill	1,300	1.30	1.36	1.32	1.35
1.50	.70	...	W. Naco	7,775	1.40	1.50	1.25	1.40
.37	.11	...	Do. warr.	4,100	.25	.26	.25½	.25½
.22	.08	...	W. Warner	nil	...	....	.12	.11
.68	.39	...	Wilrich	30,625	.43	.42½	.39	.39
.25	.14	...	Y'ke Can.	22,000	.16½	.18	.16	.16
1.24	.58	...	Y'ke Prin.	21,600	1.02	1.10	.90	.95
.13	.06½	...	York Oils	12,500	.10	.10	.08½	.08½

■1 sh. Chib. Asb. for 10 shs. Que. Chib. ▲U. S. funds. ♦♦Initial. ‡Payable in 1955. †Less than board lot. ‡When sale shown nil the figures are bid, asked and latest sale. *Payable in 1956 to date.

Volume of Stock Sales

	Montreal	Toronto	Calgary	Vancouver	New York
Sept. 24	609,000	2,907,000	121,975	170,464	2,550,000
Sept. 21	714,100	3,517,000	141,863	161,808	2,800,000
Sept. 20	919,300	4,266,000	260,400	119,687	2,870,000
Sept. 19	921,800	4,567,000	161,434	242,392	2,830,000
Sept. 18	882,500	3,093,000	178,013	152,307	3,030,000



Unlisted Mines and Oils

(Compiled from Quotations by G. E. Leslie & Co., Montreal)

Stock	Bid	Off.	Stock	Bid	Ask
Abeta	8	11	Main Oka	14	17
Aconic	5	5½	Mid Chib	58	63
Adnor	4	7	Miller Cop	39	43
Atlas Chib	19	22	Mtgomery	2	4
Bald Mtn	13	16	Nat Mal	12	16
Belmont	6	10	N Lorie	9	11
Bluegrass	6	9	N Augur	3	5
Bornite	30	35	N Pen	5	8
Brosn'n Ch	73	77	Nipiron	20	25
Burrex	65	75	Norbeau	85	95
Cdn Javeln	23½	34	Norcopper	56	65
Cent Mng	75	1.00	Normiska	36	41
Chib Cop	60	70	Oklend	7	9
Clinger	5	7	Ont Nick n	27	31
C St Sim'n	18	21	Orefield	35	40
Cont Cop	28	32	Ormonte	..	30
Cop Valley	40	45	Pascalis	10	15
Dawmac	..	1.25	Pennbec	55	60
Derogan	4	7	Pwr Uran	9	12
Enterpris's	47	52	Provincial	2	5
Flicka	7	10	Quedon	15	20
Flu Bar	..	1.20	Quejo	8	11
Frd High	1.00	1.15	Rand Mal	5	7
Garland	..	20	R Diamond	88	93
Gibson	24	28	Roymont	10	20
Glencona	4½	5½	St Law	45	65
Goldmaque	4	6	St Jude	16	20
Imp Min	9	11	Scott Chib	9	12
Independ	12	15	Selby Mng	45	52
Int Asb	5	10	Sharbot	58	60
Int Lithm	..	1.15	So Bach	15	20
Kamlac	9	11	Suzor	12	15
Kenmac	8	11	Starlight	9	11
King Cop	10	20	Titanium	75	85
Lk Chib	42	46	Tomiska	..	26
Lassie	5	8	Wesley	8	11
Lun-Echo	47	52	Wm Leys	16	18
Lynivue	41	46	Young Dav	13	17

Municipal Bonds

Sept. 25, 1956

	Coup. %	Matur.	Bid $	Ask. $	Yld. $
Calgary	3½	'80	86	87½	4.80
Edmonton	3½	'80	85	87¾	4.75
Halifax	3½	'66	88½	90½	4.75
Hamilton	3	'67	84¾	86¾	4.60
Montreal	3	'70	79¼	81¼	4.85
Moose Jaw	3½	'60	93¾	95¼	4.70
Ottawa	3½	'68	87	89	4.50
Regina	3	'64	86¾	88¾	4.65
St. John, N.B.	3½	'65	89	91	4.75
Toronto	3	'68	83¼	85¼	4.60
Vancouver	3¾	'69	89	91	4.70
Victoria	3¾	'68	89½	91½	4.70
Windsor	2¾	'75	72	74	4.85
Windsor	3½	'75	81¼	83¼	4.85
Windsor	2½	'75	69	71	4.85
Winnipeg	3	'69	82½	84½	4.60

Bond Tenders

12 Noon, Sept. 27, 1956, Government of Canada Treasury Bills — Payable Dec. 28, 1956, $135,000,000. Dated Sept. 28, 1956.

Investment Trusts

	Divd. pd. cents ▲		
All-Can. Com. Fd.	10.62 (20.5♦)	5.46	5.94
All-Can. Div. Fund	16 (17.25)	5.06	5.51
Balanced Mut.	13 (15)	5.13	5.64
Can. Invest. Fund	27 (34)	9.25	10.15
Canafund	70 (110)	36.29	38.10
Champion Mut. Fund	9½	5.49	6.03
C'wealth Inter.	18 (28)	8.11	8.91
Corporate Inv.	23 (26)	8.85	9.66
Diversified Inc. Shs. B	13 (12)	4.10	4.45
Dom. Equity Inv.	15+15 (42)	14.80	15.13
Grouped Inc. (new)	5■ (10)	3.96	4.33
Growth Mines		4.78	5.02
Growth Oil & Gas		8.07	8.48
Investors Mut.	21 (30)	10.39	11.23
Leverage Fund	18 (20)	5.80	6.40
Mut. Acc. F.	13.07 (23.53)	6.78	7.41
Mutual Income	19.37 (23.42)	5.43	5.94
Resources of Can.	(6)	8.26	...
Sup'vised Amer.	8 (21)	6.10	6.16
Sup'vised Executive (1955)		36.15	...
Sup'vised Executive (1956)		29.68	30.98
Sup'vised Gr'th Fund	(4■)	2.01	2.03
Sup'vised Inc. Fund	9 (22)	4.33	4.37
Timed Invest.	7 (26)	†5.20	*5.20
Trans-Can. A	48.4 (83)	29.35	...
Do. B	47.6 (96.6)	31.60	...
Do. C	3.8 (19)	6.35	6.75

†Less or (*) plus stock exchange commission.
▲Paid or payable in 1956 total paid in 1955 in parentheses.
■Plus stock divd.
♦Reinvested.

Commodities

	Latest week	Previous week	Same week last yr.
Cattle	$21.00	$21.74	$20.00
Hogs	27.93	37.50	27.50
Copper, lb.	.39	.40	.43
Sugar, raw, lb.	.0554	.0560	.0550
Coffee, lb.	.60¾	.61	.59¼
Hides	.16	.16	.13
Weekly Commodity Indices			
Dow Jones	160.82	161.38	154.14
U. S. Labor	115.1	115.1	111.4
Monthly Commodity Indices			
Canada (D.B.S.)			
Retail (Aug.)†	119.1	118.5	116.4
W'sale (July)	226.6	226.5	218.4
C. F'm Pro. (July)	226.6	217.2	217.4
U. S. (June)	114.2	114.3	110.3
Gt. Brit. (June)*	155.2	■155.9	....
Do. (June)▲	135.5	135.4	....

Note: †Cost-of-Living Index Revised to the Base of 1949=100.

Base of price quotations is as follows: Cattle-Steers, good up to 1,000 lb., to price Toronto. Copper-electrotypes, New York. Coffee No 4 Santos. Spot Raw Sugar 96 degrees centrifugal c.i.f.

■Revised.

Gt. Brit. Index revised. Base year 1949.

*Basic materials index (excl. fuel) for nonfood mfg. ind.

▲All mfg. products other than fuel, food and tobacco.

Bank Staff Changes

Royal:

C. W. MINARD, head office, to be assistant manager, Nassau, Bahamas.

C. H. ANDERSON, accountant, San Fernando, Trin., to be assistant manager, Georgetown, B.G.

H. A. CRAWFORD, London, England, promoted to accountant.

J. R. DE CAMBRA, Port of Spain, Trin., to be accountant, San Fernando, Trin.

G. F. RILEY, Ciudad Trujillo, D.R., promoted to accountant.

I. B. REID, accountant, Eglinton & Dufferin, Toronto, to be accountant, Lima, Peru.

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Nova Scotia:

J. D. HUBBERT, manager, Edmonton, to be manager, Hamilton, Ont.

A. McPHEDRAN, manager, Kitchener, Ont., to be manager, London, Ontario.

F. J. ARTHUR, an assistant manager, Vancouver, to be manager, Terrace, B.C.

GEOFFRION, ROBERT & GELINAS
MEMBERS
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CANADIAN STOCK EXCHANGE
TORONTO STOCK EXCHANGE
Private wires to New York, Toronto, Montreal, Quebec City
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J. E. GRASETT & CO.
MEMBERS THE TORONTO STOCK EXCHANGE
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244 Bay Street — Toronto
2881 Dundas St. W. — RO. 9-1167
(at Mavety Street)

J. BRADLEY STREIT & COMPANY
LIMITED
MEMBERS:
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Canadian Stock Exchange
Calgary Stock Exchange
Edmonton Stock Exchange
Winnipeg Grain Exchange
80 Richmond St. W. Empire 8-4831
TORONTO, ONTARIO

Norris, Adams Limited
Members
The Toronto Stock Exchange
The Montreal Stock Exchange
The Canadian Stock Exchange
PRESIDENT Bruce A. Norris — VICE-PRESIDENT George D. Adams
200 BAY STREET TORONTO, CANADA
Telephone: Empire 8-4731
Branch Office: 75 BROCK ST. — KINGSTON, ONTARIO

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DIVIDEND NOTICES

THE CANADIAN BANK OF COMMERCE

DIVIDEND No. 279

NOTICE is hereby given that a dividend at the rate of thirty-five cents per fully-paid share on the outstanding Capital Stock of this Bank has been declared for the quarter ending October 31, 1956, payable at the Head Office and at the Branches on November 1, 1956, to shareholders of record at the close of business on September 29, 1956.

By Order of the Board,
N. J. McKINNON,
General Manager

Toronto, August 30, 1956.

dividend notice

Notice is hereby given that a Dividend at the rate of Thirty-Two and One-Half Cents per fully paid share in the Capital Stock of the Bank has been declared for the quarter ending October 31st, 1956, and that an Extra Distribution at the rate of Twenty Cents per fully paid share in the Capital Stock of the Bank has been declared for the year ending October 31st, 1956, payable at the Head Office and Branches of the Bank on and after November 1st, 1956 to shareholders of record at the close of business on September 28th, 1956. Subscribers to new shares are reminded that they will rank for the purposes of this Dividend and Extra Distribution, in the proportion that the amount paid on such new shares on or before September 28th 1956 bears to the subscription price of $32.00.

By Order of the Board.
A. T. Lambert,
General Manager

Toronto, September 20, 1956.

THE TORONTO-DOMINION BANK
THE BEST IN BANKING SERVICE

THE BANK OF NOVA SCOTIA

DIVIDEND No. 348

Notice is hereby given that a Dividend at the rate of forty-five cents per share on the Paid-up Capital Stock of this Bank has been declared for the quarter ending 31st October, 1956, to shareholders of record at the close of business on 29th September, 1956; such Dividend to be paid on a pro rata basis according to the proportion paid up on the basis of the subscription price of $38.00 per share in the case of shares subscribed for pursuant to the Bank's offer to shareholders dated 31st May, 1956, and that the same be payable on and after Thursday, the first day of November, 1956, at any of the offices of the Bank in Canada.

By order of the Board
F. W. NICKS,
General Manager.

Halifax, N.S.
September 18th, 1956.

UNITED KENO HILL MINES LIMITED

United Keno Hill Mines Limited has announced the declaration of an interim dividend of ten cents per share and an extra dividend of 5c per share payable in Canadian Funds on October 15, 1956, to shareholders of record at the close of business on September 21, 1956.

It will be noted that the payment of the dividend is one month earlier than previous declarations. The Company advises that the date of declaration has been changed to conform with the normal dates of Directors' Meetings.

The above news release is authorized by

C. R. ELLIOTT,
Secretary-Treasurer,
per I. C.

Toronto, Ontario,
September 14, 1956.

UNITED KENO HILL MINES LIMITED

Notice is hereby given that an interim dividend of ten cents per share and an extra dividend of 5c per share has been declared payable in Canadian Funds on October 15th, 1956, to shareholders of record at the close of business on September 21, 1956.

By Order of the Board.
C. R. ELLIOTT
per I.C.
Secretary-Treasurer.

Toronto, Ontario.
September 14, 1956.

STELCO

THE STEEL COMPANY OF CANADA, LIMITED

DIVIDEND No. 181

Notice is hereby given that dividend No. 181 of thirty-five cents (35c) per share for the quarter ending September 30, 1956, has been declared upon the shares of the Company, payable Thursday, November 1, 1956, to shareholders of record at the close of business Friday, October 5, 1956.

By Order of the Board,
R. B. TAYLOR,
Secretary.

Hamilton, Canada, Sept. 24, 1956.

FOUNDATION COMPANIES CANADA

DIVIDEND NOTICE

Notice is hereby given that a Dividend of twenty cents ($0.20) per share for the quarter ending September 30, 1956, has been declared on the No Par Value Common Shares of The Foundation Company of Canada Limited, payable October 19, 1956, to Shareholders of record at the close of business on September 28, 1956.

By Order of the Board.
H. C. LINK,
Vice-President
and Sec.-Treasurer.

Montreal, Que.
September 20, 1956.

Riverside Silk Shows $7,680 Loss

Riverside Silk Mills Ltd., Galt, Ont., showed a $7,680 loss (before depreciation) for the first half of 1956, compared to a $6,588 profit (before depreciation) in similar period of 1955.

Since end of May operations have been profitable and plant is now operating at capacity to fill orders on hand, company reports.

DIVIDEND NOTICES

LOWER ST. LAWRENCE POWER COMPANY

Head Office, Rimouski, P.Q., Canada

DIVIDEND NOTICE
COMMON STOCK

A dividend of 43 cents per common share has been declared, payable October 1, 1956, to Shareholders of record at the close of business, on September 20, 1956.

By Order of the Board.
P. E. GAGNON,
Secretary.

RIMOUSKI, Que.,
September 14, 1956.

THE CRAIG BIT COMPANY LIMITED

QUARTERLY DIVIDEND NOTICE

NOTICE IS HEREBY GIVEN that a cash dividend for the quarter ending September 30th, 1956 of seven and one-half cents (7½c) per share has been declared on the issued 116,000 Common shares of the Company and payable on or after the 10th day of October 1956 to holders of the said 116,000 Common shares of record at the close of business on the 30th day of September, 1956.

By Order of the Board.
J. W. CHAPMAN, F.C.I.S.
Secretary-Treasurer

North Bay, Ontario
September 14, 1956

DOMINION CORSET CO. LTD.

DOMINION CORSET COMPANY LIMITED

DIVIDEND NOTICE

NOTICE IS hereby given that a dividend of twenty-five cents (25c) per Share has been declared for the quarter ending September 30th, 1956, on the outstanding Common Stock of this Company, payable October 1st, 1956, to Shareholders of Record September 14th, 1956.

By Order of the Board,
MAURICE GODBOUT, C.A.
Secretary-Treasurer.

ZELLER'S LIMITED

DIVIDEND NOTICE

Notice is hereby given that the following Dividends have been declared for the quarter ending October 31st, 1956, payable November 1st, 1956, to Shareholders of Record October 1st, 1956.

4½% PREFERRED SHARES
The regular quarterly Dividend of 56¼c per Share.

COMMON SHARES
A quarterly Dividend of 25c per share.

By Order of the Board.
T. E. McDERMOTT,
Treasurer.

MONTREAL,
September 20th, 1956.

BRITISH COLUMBIA FOREST PRODUCTS LIMITED

NOTICE OF DIVIDEND NUMBER 31

A quarterly dividend of twelve and one-half cents (12½c) per share has been declared on the issued ordinary capital stock of this Company, payable November 1st, 1956, to shareholders of record at the close of business on October 10th, 1956.

By order of the Board.
A. G. RANKIN,
Secretary.

Vancouver, B.C.
September 20, 1956.

BATHURST

NOTICE OF DIVIDENDS

The Board of Directors of **BATHURST POWER & PAPER COMPANY LIMITED** has declared the following dividends payable December 1, 1956, to shareholders of record at the close of business on November 5, 1956:

(1) A quarterly dividend of Seventy-five cents (75c) per share on the outstanding Class A shares of the Company.

(2) A dividend of Twenty-five cents (25c) per share on the outstanding Class B shares of the Company.

E. S. KIRKLAND,
Secretary.

Montreal, Que.
September 24, 1956.

Market Bid and Ask Quotations

Montreal & Toronto

Closing Quotations, Sept. 25, 1956

	Bid	Ask
xAbbican	56	59
Abitibi	35	35½
Do pr	22½	24½
Acad-Atl	9	9½
Do A	20½	21
Do pr	..	96
xAcad Ur	14	15
xAcme G	18½	20
Admiral	16½	16¾
xAdvocate	..	450
Agnew-S	7½	7½
Do pr	9½	9½
xAjax	85	88
xAkaitcho	47	..
xAlba Ex	21	23
xAlta Dis	145	155
Do vt	135	155
xAP Cons	46	48
Algom	16½	16¾
Do deb	89	91
Do wts	865	890
Algoma	108½	111
Alumin	122	122¾
Do 1 pr	22	22¾
Do 2 pr	47	47½
xAM-Lar	16	18
xAm Led	101	103
xAm Nep	200	210
xAmurex	610	675
xAnacon	241	250
xAnchor	13	14
Ang-A Ex	13½	13¾
A C P pr	52½	53
Ang-C Tel	42½	45
Ang Hur	12	12¾
xAng Rn	131	135
Anth Imp	25	25½
xApex R	13	14
xArcadia	268	270
xArcan	35	40
xArea	35	38
Argus	18½	19
Do 2.40p	50½	53
Do 2.50p	42	43
xArjon	18	19
Aro Equip	..	25
xAscot	17	17½
Ashdn A	13½	..
Do B	..	12¾
xAsh Tpi	..	320
Do A	96	..
Do B	9½	10¾
Atlan Acc	6	8
Do pr	15½	18
Atl Steel	20	29¾
xAtlas Yk	13	14
xAtlin-Rf	15½	16
xAubelle	10	11
xAumacho	41	43
xAumaque	12½	13
xAunor	206	212
Auto Elec	13¾	14
Do A	10	..
Auto F A	5	5½
Do B	100	200
xAvilbna	9	10
xBagamac	8½	9
Bailey S A	16¾	17½
Do pr	..	35½
xBanff	295	310
xBankeno	28½	31
xBankfield	9½	10
Bnk Mont	53½	53½
Bank NS	56	58
Barb-Ellis	42	..
Barcelona	400	900
xBarnat	51	53
xBarvue	71	75
xBarymin	257	265
xB Metals	68	73
xBaska	18	20
xBata	12½	16
Ba Innes	—	9½
B Pow A	60¾	61
Do B	40	43
xB-Duq	215	220
Beatty	6½	7
xBeaucge	270	275
xB Lodge	35½	39
B Lumber	19	19½
Do A	..	21
Do pr	..	32½
xBelcher	219	220
Bel Phone	46	46½
xBelltrre	200	205
xBethlm	300	305
xBevcon	30	35
xBibis	9	..
xBicroft	235	250
Do wts	100	105
xBidcop	56	63
Biltmore	7	7½
Do pr	12¾	13
xBlk Bay	62	65
Blue Rib	11	13½
Do pr	36	40
xBonville	9½	10½
xBordulac	12	14
xBouscad	12½	14½
xBouzan	165	167
Bowat pr	..	46
Bowes	20	24
xBoymar	8	9
xBralorne	490	540
xBrslman	102	110
Br Cd A	17½	18½
Do B	10	10½
Brazil	7½	7½
Do pr	88	115
Br Tk pr	46¾	48¾
Do wts	315	..
Bright	14	15¾
Do pr	20	20
xBrilund	80	82
xBritalta	315	330
BA Oil	44¾	45½
BCE 4 pp	..	82
Do 4¼pr	..	43¾
Do 4½pr	..	46½
Do 4¾pr	..	94¾
Do 5 pr	50¾	51
BC Forest	15	15½
BC Pk A	15	15¾
Do B	13½	14½
BC Pow	—	44
BC Phone	46	47½
xBr Reef	134	135
Bruck A	8	8½
Do B	300	325
xBrunhurst	8	9
xBrunsmn	10½	12
xBrunston	12	13
Brunswick	11	11½
xBufadsn	11	11½
xBuff A	66	70
xBuf Cdn	13	13½
xBuff RL	7½	9
Build Pr	36	36¾
Bullochs A	..	7½
Do B	5	5½
xBkn Hill	14	15
xBurchell	31½	37
Burlington	27½	29
Burns	12½	12½
Burrard A	7½	7¾
xCal Pet	136	140
Caldwell	..	14
Do 1 pr	21	24½
Do 2 pr	13	..
Cal Ed	26¾	27½
Cal Pow	63	63½
Do 5 pp	100½	100¾
xCan Con	500	510
C Chib	17½	17½
xCp RL	555	565
xC Bread	300	325
Do B	50	53
Can Cem	31½	32½
Do pr	28½	29
CCC Stone	7	7½
Can Foils	11	13½
Do A	..	14½
C Fdry A	28	..
Do com	..	15
CI Fndry	35½	35¾
Do 4½	104	105
Can Life	149	156
Can Mach	10	10½
Can Malt	55	58
Do pr	22¾	23
xC O Lds	300	310
Do wts	170	185
C Pack A	..	40½
Do B	36¾	37
Can Perm	89	89
C S 4 pp	..	94
xCS O wt	115	120
xCS Pete	460	485
CSL	27	28
Do pr	12	12½
C Wire A	180	..
Do B n	19¾	19¾
xC Ad Oil	47	50
Cdn Ast	30	33
xC At Oil	675	680
Cdn Baks	..	6
C Bnk C	53	53¾
Cdn Brew	26	26½
Do pr	26½	27½
xC B Emp	55	58
Cdn Can	40¾	41
Do dp r	40½	..
Cdn Celan	13½	14
Do $1 pr	15½	18
Do 1.75p	29	29¾
C Ch Cell	8¾	8¾
C Coll'ries	7	7¾
Do pr	85	88
Cdn Con	450	450
Do B	400	400
xC Dec wt	56	59
xC D Pet	620	625
C Dredge	19¾	21
xC Ex G	570	590
C Frbnks	..	27
Do pr	125	..
xCF Prod	325	330
Do A	8	8½
Do pr	52½	53
CGE	800	995
CG Sec A	22	22½
Do sec B	..	29
xC Hmtd	205	208
C Hy Car	9½	10
C Ice Mach	6	7½
Do A	10½	11½
Cdn Loco	27½	31
xC Malart	38½	41
Cdn Oil	25½	..
Do pr	..	160
Do 5 pc	..	101
Do 4 pc	..	93
Do w '53	10	12
Do w '55	5	5½
CPR	32½	32¾
C Pet pr	29½	29¾
xC PL P	375	380
xC Prosp	475	515
Cdn Salt	20	20
Cdn Tire	123	130
Do pr	20½	..
C Util pr	96	97
C Util 4½pr	82	84
C Vickers	30½	31
C Wall A	14	16½
Do B	13	15
CWN G pr	16½	16½
xC Wilstn	330	350
xCandsa	157	160
xCanam	81	95
xC-Erin	77	80
xC-Met	163	165
Do wts	75	85
xCsn Nat	125	145
xCso Oil	245	260
xCariboo	65	75
xCassiar	805	825
xCastle	395	400
C Can Inv	30	..
Do pr	100¾	..
xC Expl	415	420
xC Leduc	470	480
xC Pat	106	113
xC Porc	13½	14
xChtr Oil	205	207
Ch Trust	56	56
xChtco pr	435	650
Chat-Gai	15	15
xCh Res	415	420
xCheskirk	9	10
xChstrvlle	33	35
xCh Jac	425	430
xChib-Kay	48	50
xChib M	310	325
xChib Ex	85	90
xChimo	81	88
xChrom	..	310
Chrysler	70	70¾
xCirc Bar	200	300
Do A	475	900
xCobalt	68	69
xCoch W	85	87
Coch-D	17	18½
Do A	16¾	19½
Cockshutt	6½	6¾
xCody-R	73	74
Cgln Co L	15½	16
xC Lake	12	14
xCldstrm	152	153
Collwood	12	..
Do pr	12	..
xColomac	10	12
Comb Ent	10¾	11
xCommoil	375	425
xCom Pet	450	515
Conduits	10½	11
Conf Life	126	152
xConiagas	220	230
xConirum	43	45
xConro	24	25
xC Alenbe	15	17
Con Baks	7	8
xC Belnko	50	53
xC Beta G	24	30
xC Callin	30	32
xC C Cad	14	15
xC Cordsn	26	29
C Densn	925	930
Do wts	330	340
xC Disc	305	310
xC Dragn	63	67
xC E Crst	58	65
xC Fnmr	143	145
Do B wt	35	37
Con Fire	7	10
xCon Gill	11½	13
xCG Arro	21	22
xC Guaya	30	39
xC Hlliwl	160	164
xC Hwy	355	375
xC Mrbnr	32	35
xC M M	505	515
C M & S	30	30½
xC Morrn	27	28
xC Mosher	71	75
xC Negus	20	22
xC Nichol	12½	13
xC Nthlnd	90	99
xC Peak	10½	11
xC Persh	20	21
xC Pr A	285	300
Do B	100	150
xC Que	55	75
xC R Pop	30	32
xC Regcrt	96	97
xC Sanrm	12½	13
xCon Sud	370	375
Con Tex	390	450
xCon Thor	20	27
xC Tung	40	47
C W Pete	8¾	10
Con Gas	27½	27½
Con Glass	29	31
xConwest	670	..
Copp Cl	475	525
xC Cliff	370	375
xC Corp	136	140
xCoprcrst	50	55
xCop-Man	13	15
Corby vt	15	16
Do B	..	15½
Cosmos	12½	13½
xCoulee	86	87
xCournor	14	17
xCowchn	139	149
Craig Bit	7½	7½
xCree O	545	550
xCrestaur	9½	10½
xC Brook	475	495
Do pr	48¾	49
Do wts	100	125
xCroinor	24	27
Crn Cork	48	..
Crn Trust	23	24½
Crn Zell	52	53
xCrowpat	21	24
Crow's N	210	..
xCusco	18	20
xD'Aragon	59	60
Davis A	9¾	10½
Do B	325	325
xDe Cour	40	48
Do wts	13	17
xD Horn	38	45
xD'Eldona	16	18
xDelnite	70	73
xDel Rio	365	375
xDesmont	20	..
xDetta	12	13
xD-Leduc	150	154
Dist Seag	33½	33¾
xD Expl	..	850
Dome	13½	13¾
Dom Ang	425½	..
Do pr	95	..
xD Asbsts	14½	15½
D Coal pr	8¾	9½
D Corset C	9	10
D Dairies	7	..
Do pr	16½	19
xDiadem	30	32
D Elect	12	12½
Dom Fab	10¾	..
Do 2 pr	..	24
D Fndry	31	31¾
Do pr	98½	99
Dom Ins	210	..
D Magnes	16	17
Dom Scot	29	30
Do pr	47	49
D Steel o	20¾	21½
D Stores	37	38
Dom Tar	14½	14¾
Do pr	..	22¾
Dom Text	7½	7¾
Do pr	137	142
xD Wool	106	125
xDonalda	47	49
D Ropes B	14	14½
xD & M	120	130
Donhe Br	28¾	30
Dow Brew	35	..
xDuvan	54	55
xDuvex	29	30
xDyno	101	103
xE Amphi	9	9½
East Koot	6½	7
xE Malart	152	155
xE Sull	545	550
xE Asb	72	75
xE Metals	48	49
xE Min'g	510	515
East Steel	5	6½
Easy Wash	14	..
Do pr	15½	18
Econ Inv	38	39
Eddy	54½	55
xElder	42	44½
xEldrich	40	45
xElcta (C)	98	..
Electrolux	12½	13
xE P-Rey	43	44
xEl Sol	23	24
xEm Glcr	17	20
Emp Life	80	80
Equit Life	45	48½
Erie A	6¾	..
Do B	275	..
Estbks pr	19	22
xEureka	106	111
xExcelsior	80	90
xExpl All	62	63
Flcnbdge	37	38½
Fam Play	17½	17¾
Fanny F	20	22
xFaraday	115	117
Do wts	46	50
xFargo	270	[illegible]
xF'w Tung	27	[illegible]
Fed Fire	53	..
Fed Grain	28	29
Do pr	27½	27¾
xFed Kirk	36	38
xFibre	5½	..
Do pr	350	650
Fittings	6¾	7
Do A	10	10¾
Flash F pr	15	..
xFl Mfg.	100	110
Ford	57½	58½
Do A	122	122¾
Do B	122	129
Found'tion	21½	22½
xFrancoe'r	21	22
Fraser	35½	36½
Fremn pr	92	95
xFrobish	370	375
Do debs	80	82
xGaitwin	31	33
Gatineau	28¾	29½
Do 5 pp	100	101
Do 5½pp	104¾	110
Geco Min	17½	18
Gen Bake	5½	5¾
Gen Dyna	70½	72
Gen Elect	..	65
GMC	45	45½
xGen Pet	560	590
Do A	560	570
GP Mfg A	..	36
Do B	42	..
GS Wares	9	9
Do pr	85	88
xGenex	31	33
xG Scien	136	148
xGt YK	560	565
xGl Uran	70	71
xGoldale	22	24
xGoldcrest	14	15
xG Eagle	8	9½
xGold M	201	205
xGF Uran	25½	30
Goody'r	148	159
Do pr	48¾	49
G Mack A	7½	7¾
Do B	6¾	7
Grafton A	13½	15½
xG Bousq	18	18½
Granby	11½	13½
Gr Toy	35½	49
xGrndines	26	27
xGranduc	500	515
GL Paper	41½	41½
GN Gas	6½	6½
Do pr	41	44¾
Do wts	225	250
Gr Pl Dev	43½	45
xGr S G	320	325
GW Coal A	9¾	9¾
Do B	8½	9
Gr West	..	20
xGreen'g	450	500
xGreyhwk	40	42
Gridoil	10	10¾
Guar Tr	21	21½
xGulch	30	34
xG Lead	12	14
Gunnar	17¾	18
Do wts	880	925
xGurney	300	400
Do pr	20	22
xGwillim	13	13½
Gypsm n	36½	37
Hahn	21	22
Do A	15	..
xHallnor	325	345
H Cotton	15	16
Do pr	..	100
H Carpet	7	7¾
xH Rock	13	14
xHar-Min	35	36
Hartz A	8½	10
xHasaga	15	15½
xH of Lks	12	13
xHeadway	83	85
xHeath	19	21
xHees	350	350
Hndsht n	..	6½
Do pr	96	97
Do rts	..	15
xHeva	7½	8
xH Crest	34	37
xH-Bell	81	85
xHghwood	37	38
H Dauch	45	45½
Hi-Tower	9¾	9¾
xHldn A	200	300
Do B	..	160
Holinger	25½	25¾
H Oil A	13	13½
Do B	11¾	12½
H Smith	38	38½
Do pr	40	44
xHoyle	710	715
Hud Bay	82½	83
xHugh-P	40	44
Hghs O A	16	16½
Do B	12	..
Do pr	26	..
Hur Erie	34½	36
Husky	12¾	13
Do wts	630	650
Imp Inv	10½	10¾
Imp Bnk	56½	56½
Im Fl-Gl	24	26½
Do pr	..	27½
Imp Life	55	55
Imp Oil	57½	58½
Imp Tob	11½	11¾
Do pr	6	6½
xInd Lake	21½	22
Ind Accep	29	29½
Do 4.50p	..	97½
Do 2.25p	..	48
Ingersoll A	7½	7½
Inglis	8	8½
Ing & B p	11	14½
In C pr	17½	17¾
xInsp'tion	115	120
Int Bronze	12	15
Do pr	24	24½
I Met A	41½	41½
Do pr	95½	97
I Mill pr	89	..
Int Nick	101½	102
Do pfd	127½	127½
Do $5pr	6½	..
Int Pete	34½	35
Int Pow	264	265
xInt Rwk	222	225
Int Util	..	49¾
Intprv BC	14½	14½
Do A w	250	..
Do B w	110	250
Intprv PL	43½	43¾
xIrish C	222	225
xIron B	255	260
xIsotope	150	160
xJ Waite	20	23½
xJacobus	23	24
Jam Pub	24	25½
Jam P.S.	104½	..
xJaye Ex	68	70
xJeanette	48	50
xJellicoe	23	24
xJoburke	13	14
Johns-M	49½	49¾
xJoliet	80	81
xJonsmith	20	21
Journ Ott	16½	18
xJowsey	89	90
xJupiter	200	205
Kelvinator	10¾	12
xKenville	9½	10
Kerr Add	17½	17½
xK Lake	50	60
xKeybycn	8	8½
xKeymet	50	65
xKilembe	315	320
Do wts	145	150
xKirk H	59	60
xKirk M	163	165
xKirk T	20	22
xKroy O	228	230
Labatt	20¾	21
Labrador	20½	21
xL Cinch	65	70
xL Duflt	200	203
xL Ling	14½	16
xL Osu	18	20
xL Shore	..	425
xL Wasa	25	28
L Wds pr	..	140
xLa Luz	370	375
xLamque	280	290
Laura Sec	18¾	19½
Laurent A	10	10½
xDo wts	60	100
L & J A	20½	20¾
Do B	21½	..
xLeitch	82	88
xLencourt	12½	14
Lewis Bro	9	10
xLexindin	16	18
xLib Pet	250	255
xLL Lac	176	180
Loblaw A	47½	48
Do B	75	79
Do A pr	29	29¾
Do n A	17½	19
Do n B	..	18½
Do pr	40	41
Loews	120	..
xLomega	12½	13
xLon Hos	105	170
Do A	..	8
xLI Pete	13	14
xLorado	96	100
xLouvicrt	18	20
L St Law	19	..
Lowney	22	24
xLndhrst	129	130
xLynx	9	12
xMacassa	182	188
xMacdonld	65	68
xMacfie	11	11½
xMackeno	43½	44
Mackin St	43	44
Do pr	100	..
xMacLd	125	130
MacMill A	35	..
Do B	35	35½
xMadsen	221	223
xMages	115	120
xMagnet	9	9½
Mlmn c pr	..	99
xMalartic	132	140
xManest U	21	23
M Sug pr	..	100
M Lf Gard	20½	21
M Lf Mill	8½	8¾
Do pr	92½	99
xMaralgo	23	27
xMarcon	13½	14
xMarcus	8	10
xMarigold	30½	31
xMartme	250	254
Do B wt	51	52
xMartin	12	13
Ma[illegible]-Har	6¾	7
[illegible] pr	87	87½
xMatatch	60	110
Maxwell	6½	6¾
xMaybrun	99	100
McBrine pr	9¾	11
McChe A	17½	..
Do B	18	..
McColl	62	62½
Do pr	94	97
McIntyre	..	81
xMcKenz	31	34
xMcMrmc	11	12
xMcWatts	29	35
xMedalln	305	310
xMentr n	68	69
xM Chip	9	10
xMerrill	236	240
Merr Pet	..	16¾
xMeta Ur	22	23
Mex LP	15½	15½
Do pr	11½	12¾
Mex Tram	8	14
xMidcon	116	117
Mid Pac	19½	27½
xMidrim	147	149
xM-West	400	420
Do wts	120	220
xMill City	29	30
xMilliken	128	130
xMilt Brk	365	390
xMindamar	16	19½
Ming Corp	23½	24
xMin End	39	40
xMin-Ore	21	25
Mthl & C	34½	..
Mod Cont	11½	11½
Do A	13½	14
xMogul	275	280
Molson A	24½	27
Do B	21¾	22
xM Knit	450	475
Do pr	44	44
Mon Mort	45	..
xMoneta	66	69
Mont Loco	..	16
Moore	49¾	50
Do A	784	..
Do B	1188	..
Mrgn & C	..	21
Do 4½pr	100½	101
xMulti-M	110	113
xNama Cr	90	92
Nat Drug	11	11½
Do pr	11½	11¾
xNat Expl	41½	47
Nat Groc	20	22
Do pr	26½	26¾
N Hos A	490	..
Do B	485	500
Nat Lead	104½	104¾
xNat Pet	405	430
N St Car	28½	29
Nat Trust	42	43
xNello	22	30
xNes Lab	100	106
xN Alger	12	13
xN Athna	58	63
xN Bid	14	15
xN Brist	107	110
xN B Dm	220	225
xNew Cal	60	61
xN Chb'n	242	245
xN Concrd	32	35
xN Cont.	65	69
xN Davies	24	25
xN Delhi	46	50
xN Dick	151	155
xN Frtune	27½	28
xN G Ex	150	153
xN Gldvue	19	19½
xN Harr	19	20
xN Hghge	52	55
xN Hosco	22	25
xN Jason	16	18
xN Kelore	17	19½
xNewlund	35	38
xN Man	114	115
xN Minda	38	39
xN Mylma	13	14
xNewnth	11	12½
xN Ryn	..	15
xN Ryrn	370	375
xN Senat	8	8½
xN Super	226	230
xN Taku	22	23
xN Thurb	13	13½
xN Rim	370	375
xNip'ing	340	355
xNisto	12	13
xNor-Ac	46	48
Noranda	59	60½
xNordon	17½	25
xNorgold	14	15
xNorlartic	13	13½
xNormetl	670	675
xNorpax	170	173
xNorsynco	56	58
xNorthcal	110	135
xNC Oils	630	640
Do wts	275	290
Do pr	36	37
xNor Inca	7	7½
xN Rnkn	129	130
xNthspn	400	405
N Star	14	14½
Do wts	6	6½
Do pr	43½	44
Do w'56	250	295
xN Can	115	118
NQ Pow	20	31¾
Do 1 pr	48	50½
NW Util p	80	81
xNorthlnd	80	84
xNorvalie	28	30
xNudulma	38	40
Oak Wood	9	..
xObaska	8	10
xO'Brien	65	70
Off Spec	16½	18½
xOgama	23	23½
xOil Sel	15½	16
xOka Rare	75	80
xOkalta	275	280
xO'Leary	19	21
xOmnitrans	7½	8
xOB Sup	30	100
Do pr	460	700
xO Jock	230	235
Do pr	9½	9½
Do B pr	9	9½
Do wts	54	55
Ont Loan	28	29
Ont Steel	25	26
Do pr	133½	..
Opemiska	14½	14¾
xOr Cr	300	320
xOrenada	29	29½
xOrmsby	42	45
xOsisko	35	38
xPac Cyle	140	165
xPac East	10½	12
Pac Pete	16½	16¾
Page-Hers	96	98
xPamour	49	51
xP West	28½	30
xParamaq	11	12
xParbec	9	9½
xPardee	60	65
Pkr Drill	6	6½
xPater	74	79
xPaymstr	25	30
xP River	950	975
Pembina	42½	43
Do pr	47	47½
Penmans	25	26
Do pr	119	120
PC Jewel	21	25
Do pr	97	99
xPerron	26	27
xPeruv O	170	180
xPerm G	205	208
xPetrol	110	118
xPhillips	135	140
Photo Eng	43	44
xPick Cr	124	130
xPioneer	160	170
xPitch-Or	10	11
Placer	13	13½
xPonder	66	70
xPoplar O	25	38
Powell R	45½	47½
xP Rouyn	50	52
Pow Corp	63½	64
xPraire O	425	450
xPrem B	13½	14½
Prem Tr	88	95
xPres El	140	170
PRM Inc	28¾	30
Do debs	87	89
Do wts	400	475
xPreston	595	600
Price Bros	92	94
xPronto	475	490
Do wts	120	125
xPros Air	155	160
Prov Tr	12½	13
xProvo G	190	193
xPurdex	22	23
xQue Ch	200	202
xQue Cop	145	150
xQue Lab	13½	14
Que Lith	10¾	11
xQue Man	92	100
xQ Metal	250	255
Que Pow	26	26½
xQueenstn	20	22
Quemont	22¾	23½
Quinte A	10¾	11½
Do com	5	..
xRadiore	99	100
xRainvlle	160	170
Rapid-Grip	8½	9½
xR Earth	188	190
xRayrock	140	145
xR Expl	12	12½
xReeves	190	200
Regent	20	22
xRenabie	231	232
xRexspar	43	44
Rnlds A p	..	98
xRio Pal	188	189
Rio Rup	17	18
R Silk A	10	10½
Do B	280	440
xRix Ath	62	65
Robertson	13	14
Do $1 pr	18	18¾
xRobin	325	475
Do pr	..	300
R Little	9¾	9½
Do A	13½	14
xRoche	12½	13
xRockwin	22½	25
Rlnd P pr	85	91
xR Cons	11	12
xRoxana	10½	11
Ryl Bank	65¾	66
Ryl Oak A	11	14½
Royalite	..	15½
Do pr	29½	29½
Russell	11	11½
xRyanor	15	16
St I C A	16½	17
St L Corp	68½	69
Do pr	..	98
xSt Michl	24	26
xSan Ant	75	78
xSand R	16½	17
xSapphire	195	200
Do debs	82	90
Sar Bridge	15	15
xSask C	285	290
Scarfe A	11½	11¾
xScurr-R	350	355
Scythes	14¾	15
xSecur F	365	370
Shawin	88½	89
Do A	45	45½
Do B	48	50½
xShawkey	12	13
xSheep C	110	120
xSherritt	790	800
Sher-Wms	39	40
Do pr	138	..
Shrf-Hors	10	10½
Sicks	23½	25
Do vt	23	23¾
xSigma	480	500
xSilanco	11½	12
Silknit	19	24
Do pr	37½	..
xSil Mill	102	105
xSil Stand	46	50
Silvwd A	10¾	11½
Do B	11½	11½
Simn & Sn	11	..
Do 5%pr	..	94¾
Simpsons	22½	22¾
xSiscoe	75	82
xSKD Mf	350	400
Slater new	16	17
Do pr	43½	..
xSlocn VR	18	23
Smrvle pr	49	49½
xSouris	22	26
Southam	49½	50½
xSouth A	850	900
South can	52	53
xS U Oils	45	49
xSpooner	30	31
xStadcona	27	28
St Brands	36¾	36½
St Pav	39¾	39¾
St Radio	12	..
xStnleigh	235	250
St Brk A	7½	9
Do B	8	9
xStanwell	75	77
xStarratt	9½	10
Stedman	22	24
Steel Can	65¾	67
xSteeloy	9	10
Steep R	19¾	19¾
Stnbrg pr	..	101
Ster Tr	46	..
xStvl pr	450	[illegible]
Stuart Oil	16	16¾
xSturgeon	56	58
xSud Cont	14½	16
xSullivan	425	430
S Propane	6	6½
Do pr	..	24
Do wts	280	300
Supt Ord	18½	18¾
Do com	26	42
Do pr	100	100½
Surity Oil	105	108
xSur oils	9	10
xSurf Inlet	9	10
Switson	6	6½
xSylvnte	112	115
Tamblyn	40½	42
Do pr	42½	46
xTandem	11	13
xTaurcns	38	40
Taylor PC	9½	9¾
Do pr	10	10
xTeck-H	180	185
xTemgmi	500	530
xTex Cal	75	81
xT Lund	150	155
xTiara	16½	18
TT Tailors	10	12
xTombill	35	37
xTorbit	65	70
T-D Bank	44	44½
Tor Elev	19	20
T Gen Tr	35½	36
Tor Iron	19	20
Do A	19	20
Tor Mort	112½	..
TorS av	36½	..
xTowagmc	13	14
T Fin A	47½	47¾
Do B	43	48
Do 4½p	..	97½
Do 5 p	47½	48
Do A rts	17½	..
Do B rts	18¾	..
Do wts	50	..
xTrans C	150	154
xTrans-E	217	224
xTrans Er	33	34
Trans-Mt	75½	76½
Trans PPL	13	15
xArans R	32	35
Triad O	950	975
xTrin Cop	27	35
Tuckett	137	147
Union Acc	5	5
Do 2 pr	8	8½
Un Gas	54	56
xU Mining	22	23
xU Asbest	655	665
U Corp A	30	..
Do B	24¾	25½
xU Estella	16½	17
U Fuel A	59	60
Do B	41	41½
xU Keno	600	615
xU Mont	19	20
xUn Oils	203	205
Un Steel	16¾	16¾
xUpp Can	86	88
xVanad	335	350
xVandoo	23	24
Ventures	40½	41½
Viau Ltd	66	70
Viceroy A	6¾	7
Do B	300	375
xVico	22	23
Vic G Tr	25½	26
xViolmac	178	180
V Dare pr	12	13
xVulcan	61	63
Wabasso	17½	18½
xWainrgt	300	325
xWaite A	13¾	14
Walk GW	68	68½
Wat Equip	17	18½
Wayne P	72	73
xWeedon	47	48
Wellington	78	..
xWerner	33	35
xW Msn p	..	25
xWespac	31	31½
xW Malar	10	11
xW Mygl	120	125
Westeel	18¾	20
xW Ashley	11½	13
W C Brew	30	30
xW Delta	158	160
Do wts	40	44
W Gro A	38	38½
Do pr	28	30
xW Lease	600	645
Do wts	25½	30
xW Naco	133	135
Do wts	25½	30
Weston A	19½	19½
Do B	20	20½
Do pr	94	95
White 1 pr	..	44¾
White P	9	10
xWillroy	255	265
Do wts	111	185
xWilrich	39½	40
xWiltsey	11	13
xWinchstr	9½	10
xWindwrd	17	18
xW Cent	11½	11¾
xWood A	365	390
GH W pr	98	99
xW Comb	285	350
xWr Harg	158	165
xY Lead	30	33
xY Canuck	16	19
xYellorex	14½	15
xYk Bear	200	204
xY Knt A	150	190
Do B	50	70
xYukeno	9½	10
Zelrs 4½%	..	48½
xZenmac	30	31
xZulapa	40	45

x—quoted in cents.

Toronto Curb

	Bid	Ask
Andian	5½	6
Ang Cdn P	37½	39
Ang-Nfld	10	10½
Asbestos	..	38
B Am Bk	31½	35
Brown	18½	18¾
xBulolo	450	475
CD Sug	22	23
Can Ving	18½	18½
C Bronze	30	31
Do pr	102	..
C Cottons	7	7½
Do pr	7	8
CG Inv	29¾	30
C Indust	18	19
CIL pr	..	90½
C Ingersl n	48	49
xC Mconi	405	425
CW Lumb	22	28
C Westgse	43	45
xCoast C	550	800
C Paper	36¾	37
xDalhousie	20	22
DeHav	145	198
Dish Stl pr	24	..
D Bridge	20½	21
D Glass	47	49
Do pr	15½	..
D Oil Clth	30½	34¾
Dupont	23	23½
Do pr	..	90
Gaspe Cop	45	47
Hayes	30½	34
Int Pap	109½	112
Int Util	47½	49½
IP Util	10½	12½
Langley pr	35¾	39
Lob Inc	67	70
MacLaren	85	90
MO Paper	32¾	33¾
Niag Wire	51	51
Ogilvie	36	36½
Do pr	157	165
xPato	450	470
xPend Or	385	395
Price Br	60	62
Ridgeway	44½	45
Sangamo	12	13
xSW Pete	44	50
Third CG I	6½	8
Twin City	13½	..
Univ Pr n	20	20½
xYukon C	61	68
Zeller's	25½	25¾

x—quoted in cents.

Canadian Stock Exchange

	Bid	Ask
Beaubran	29½	30½
Beld Cort	7	8
Do pfd	10	..
Belg Stors	14½	..
B'fly Hose	..	750
C Floor B	..	18
Cdn Arena	96	..
Cdn Pr & P	6¾	7½
Cdn SlkA	375	400
Catelli A	25	26
Do B	38½	..
Cinzano A	35	..
Do 5½% pf	83	..
Cl Neon A	5½	8
Do B	6½	8
Do pfd	72	80
C Div A	160	..
Do pfd	37	..
Crain R L	20	..
Dav & F A	50	..
Dom Eng	23	28
E Koot pf	80	..
For Pr Sec	50	56
Freiman 4½% pfd	..	92
Horner A	..	11
Htl La Sal	21	..
Hub Flt	115	..
Hydro El	10¾	10¾
Int Paints A	7½	12
Do pfd	..	23
Inv Found	43½	50
Do pfd	59	60½
Lambert A	12	13
Do B	15½	..
Latonia In	18½	19¾
Lochabr A	10	..
Do B	250	..
London Can	8	..
Mclaren P	85	86
Melch Dis	400	500
Do pfd	11	11¾
Mica Co	250	275
Mtl Refrig	36	..
Mt Roy R	..	15
Nfld L&Pr	43½	45
Paton Mfg	9½	..
Do pf 7%	22½	..
Paul Ser St	6	..
Pr Crp 1st	..	45
Do 2nd	68	68½
Que-Tel	19	20
R&M Bear	..	20½
Reitman's	15	16½
Renld Chs	17¾	20½
Sangamo	12	12¾
So Can pf	125	130
Stand Clay	10	..
Stowell A	15	..
Do B	9	..
Tooke Br	65	110
Do pf	140	175
Un Am A	8	10
Do B	7	..
Do VT A	8	..
Un Dist	11½	..
Waterman	8½	9½
Wilson, J C	8	..
Wdsor Htl	40	42
Wood Mfg	47	..
MINES		
Alta	10	10½
Ameranm	16	17
Arno	11	13
Band-Ore	11	12
Barvallee	12	13
Beatrice	11	11½
Bellechsse	60	75
Belle-Chib	30	31
Boreal Rar	18	20
Bouzan	160	178
Burnt Hill	..	190
Calumet U	10	12
Cdn Lithm	44	46
Cartier-M	7	7½
Celta	8	8½
Cen Man	9	10
Cortez Ex	14	15
Duvan	52	65
East Smelt	..	550
Fab Metals	23	27
Fontana	12½	13
Gui-Por U	10½	..
Hcrest Coll	70	..
Hud-Rand	35	37
Iso Ur	21	22
Jardun	17	20
Kontiki Ld	14	14½
Lingside C	12	14
Mogador	60	70
Molybnite	110	115
Monpas	7½	8
N Formaq	52	53
N Lafay'te	36	..
N Pacific	165	175
N S'tiago	12	13
N Vinray	10	11
Nocana	8½	..
Obalski	35	38
Orchan Ur	17	..
Pitt	16	17
Por Prime	11	13
Que Smelt	86	90
Red Crest	25	25½
Soma-Duv	8½	9
Tache Lk	43	44
Tazin	11½	18
Tiblemont	50	53
Trebor	37	38
Valor Lith	22	23
Virg Min	212	215
Wendell	7½	8
Westville	21	28
OILS		
Altex	27	30
Bonn'lle	43	46
Calalta	135	..
Emp Oil	26½	..
Gaspe	15½	..
Gateway	..	7
Phillips	135	140
Quebec	8	9

NORMISKA MINING & EXPLORATION LTD. reports completion of an electromagnetic survey on its Levy and Daubree twp. property where a number of favorable zones were indicated. Some conductors found ore indicated on strike. Company estimates 5,000 ft. of drilling will be required for a qualitative test of the conductive zones.

BROSNAN CHIBOUGAMAU MINES reports 18 anomalies indicated on its 900-acre property in McKenzie township with drilling indicating copper mineralization. Company is acquiring an 800-acre property in Bignell township and 800 acres in McCorkill township — both in the Chibougamau area.

DIVIDEND NOTICES

ATLAS STEELS LIMITED

Notice is hereby given that a dividend of twenty-five cents (25c) per share on the Common No Par Value Shares of the Company has been declared and the same will be payable on the first day of November, 1956, to shareholders of record at the close of business on the third day of October, 1956.

By Order of the Board.
A. G. HOWEY,
Secretary.

Dated at Welland, Ontario,
September 21st, 1956.

Reitman's (Canada) Limited

COMMON DIVIDEND NO. 26

Notice is hereby given that a quarterly dividend of 15c per share has been declared on the Common Shares of the Company payable November 1st, 1956 to shareholders of record at the close of business on October 15th, 1956.

By Order of the Board.
JACK REITMAN,
Secretary-Treasurer.

Montreal, September 24th, 1956

Grain Prices

Winnipeg Futures

Week to Sept. 24, 1956

Crop Year from Aug. 8, 1956 High	Low		High for week	Low for week	Close Sept. 24
		Oats—			
.83	.79½	Oct.	.82¾	.81½	.81½
.79½	.78	Dec.	.79½	.78½	.78½
.79¾	.76½	May	.79¾	.78	.78
		Barley—			
1.09½	1.03¾	Oct.	1.09½	1.07½	1.08½
1.03½	1.00½	Dec.	1.03½	1.02½	1.03¾
1.04¾	1.00½	May	1.04¾	1.02¾	1.04
		Rye—			
1.37¾	1.21½	Oct.	1.37¾	1.32½	1.33¾
1.38½	1.21½	Dec.	1.38½	1.34¾	1.35½
1.43½	1.25	May	1.43½	1.39½	1.40½
		Flax—			
3.35	3.07½	Oct.	3.28¾	3.18	3.18
3.04½	2.80¾	Dec.	2.98½	2.89½	2.89½
3.03½	2.80	May	2.97½	2.88	2.88

Chicago Futures

Week to Sept. 24, 1956

Crop Year from Aug. 8, 1956 High	Low		High for week	Low for week	Close Sept. 24
		Wheat—			
2.26¾	2.13¾	Sept.	2.26½	2.24½	2.25
2.31¾	2.18½	Dec.	2.31¾	2.28½	2.31
2.35½	2.21¾	Mar.	2.35½	2.32	2.34¾
2.34¾	2.20	May	2.34¾	2.31½	2.34¾
2.31	2.12½	July	2.29	2.26½	2.28½
		Corn—			
1.55½	1.42¾	Sept.	1.55½	1.47½	1.50½
1.44	1.36	Dec.	1.38¾	1.36	1.36¾
1.48¾	1.37½	Mar.	1.43½	1.37½	1.41½
1.51½	1.43½	May	1.45½	1.43¾	1.44¾
1.52¾	1.46	July	1.46¾	1.46	1.46½
		Oats—			
.76½	.71½	Sept.	.73½	.71½	.71¾
.78¾	.74½	Dec.	.77	.74½	.74¾
.79½	.76½	Mar.	.78¾	.76¾	.77½
.79½	.76½	May	.78¾	.77½	.77¾
.77	.73½	July	.76½	.75½	.75½
		Rye—			
1.52¾	1.33½	Sept.	1.52¾	1.49½	1.52
1.55½	1.37¾	Dec.	1.55½	1.51½	1.53
1.59	1.40½	Mar.	1.59	1.54½	1.56½
1.59½	1.41	May	1.59½	1.54½	1.56½
1.56½	1.51¾	July	1.56½	1.51¾	1.52½
		Soybeans—			
		Sept.	2.36¾	2.31	2.31½
		Nov.	2.37½	2.31¾	2.33½
		Jan.	2.41½	2.35½	2.37¾
		Mar.	2.44½	2.38¾	2.40½
		May	2.47½	2.41¾	2.43½
		July	2.44½	2.43½	2.44½

Winnipeg Cash

	For Week Sept. 24 High	Low	Prev. week High	Low
Oats—				
2 C. W.	.86	.85	.86½	.84¾
3 C. W.	.82½	.78¾	.80¾	.79¾
Barley—				
1 Feed	1.05¾	1.05	1.05¾	1.03¾
2 Feed	1.05	1.03½	1.05½	1.03¾
1 Malt	1.21	1.20	1.20½	1.19
Rye—				
1 C. W.	1.36	1.30½	1.33¾	1.29½
2 C. W.	1.36	1.30½	1.33¾	1.29½

Chicago Cash

	For Week Sept. 24 High	Low	Prev. week High	Low
Corn—				
2 Yell.	...	...	...	...
Oats—				
1 H. W.	.74¾	.72½	.75½	.72½

Significant Investors' Index Numbers

	Mach. and equip.	Pulp and paper	Mill-ing	Oils	Textiles and cloth-ing	Food and allied prod.	Bever-ages	Bldg. mater.	Power and trac-tion	Banks	Total utili-ties	Total co's
No. of Securities	10	9	2	5	9	14	10	15	8	7	13	96
*1935 to date:												
High	947.5	1238.1	262.0	258.0	410.5	203.5	650.0	535.9	233.1	304.7	219.0	297.8
Low	69.7	51.6	61.2	78.4	78.4	79.5	79.3	66.7	60.2	60.0	62.5	61.1
1956 Monthly Figures:												
Jan.	735.6	1070.0	209.4	175.5	179.9	196.8	583.7	458.4	192.6	260.0	206.5	248.5
Feb.	728.0	1077.3	199.2	182.6	174.0	197.3	579.0	464.0	190.6	264.2	204.1	249.2
Mar.	804.6	1153.0	199.6	205.2	178.8	199.7	590.4	503.6	194.3	276.8	210.2	267.9
Apr.	826.4	1223.9	187.4	210.0	170.9	191.8	577.5	519.5	200.2	288.7	209.3	273.0
May	848.1	1192.5	179.8	211.7	160.2	180.8	551.7	488.5	201.0	271.7	204.2	268.5
June	843.6	1146.0	167.3	219.4	158.8	181.5	549.1	466.3	206.0	260.7	199.8	267.0
July	913.7	1185.8	173.9	234.9	159.5	190.8	565.4	504.5	222.4	287.4	207.9	282.4
1956 Weekly Figures:												
Aug. 2	947.5	1216.4	182.6	254.0	160.0	196.5	572.0	522.5	232.6	304.7	215.6	297.3
Aug. 9	936.7	1195.4	181.6	258.4	158.7	197.2	562.8	523.4	233.1	298.2	219.0	297.8
Aug. 16	917.0	1174.2	170.4	252.8	158.3	197.9	562.3	513.4	229.4	296.3	217.1	293.8
Aug. 23	898.8	1162.3	175.0	248.3	156.1	193.3	549.3	510.3	224.9	289.0	215.5	288.6
Aug. 30	877.0	1128.4	166.5	236.8	158.4	192.4	[illegible]	[illegible]	220.2	288.9	211.2	281.3
Sept. 6	896.0	1142.6	170.1	249.5	156.7	190.5	547.4	505.9	223.8	290.4	214.6	288.2
Sept. 13	863.8	1094.4	166.4	243.0	151.8	185.4	534.1	484.9	220.1	285.2	209.6	280.3
Sept. 20	844.3	1045.9	164.8	243.4	153.8	179.8	520.2	474.2	218.9	282.5	207.5	275.2

* High and low for year from 1935 to date inclusive are based on weekly figures used by the Dominion Bureau of Statistics.

Toronto Stock Exchange Index

	20 Indus.	20 Golds	15 B.M.	15 W.O.
Sept. 24	473.96	81.24	237.63	160.85
Sept. 21	474.19	80.93	240.31	161.44
Sept. 20	470.48	80.15	235.80	159.88
Sept. 19	473.85	80.74	237.80	163.25
Sept. 18	477.43	82.21	242.35	165.24
Month Ago	489.02	85.44	251.31	169.07
Year Ago	438.50	84.63	212.03	111.44
1956 High	506.33	90.35	261.51	184.09
1956 Low	430.46	80.15	218.46	118.09

Montreal Stock Exchange Index

	10 Util	20 Indus	30 Com	10 Pprs	15 Golds
Sept. 24	141.1	300.1	247.1	1449.64	77.49
Sept. 21	140.2	300.5	247.0	1458.71	76.99
Sept. 20	139.4	298.2	245.3	1451.87	77.16
Sept. 19	140.9	301.2	247.8	1467.03	78.51
Sept. 18	141.6	304.2	250.0	1496.61	78.94
Mon. Ago	145.7	317.7	260.4	1612.87	84.98
Year Ago	136.0	291.9	239.9	1442.41	76.52
1956 High	148.1	332.0	270.7	1712.24	89.73
1956 Low	133.7	283.5	233.7	1341.29	75.69

Dow-Jones Closing Stock Averages

	30 Indus	20 Rails	15 Util	65 Stocks
Sept. 24	487.70	157.73	67.08	172.11
Sept. 21	490.33	159.43	67.39	173.23
Sept. 20	487.13	157.27	67.07	171.87
Sept. 19	488.72	156.75	67.21	172.14
Sept. 18	493.45	157.76	67.70	173.60
Month Ago	505.70	160.90	68.67	177.43
Year Ago	455.56	153.13	63.04	162.75
1956 High	521.05	181.23	71.17	184.11
1956 Low	462.23	153.97	63.03	164.29

New Highs and Lows

During the week ended Sept. 21, seven new highs and 66 new lows were recorded among the general stocks on Canadian stock exchanges. In the mining group there were four new highs and 89 new lows. In western oils there were two new highs and 19 new lows.

GENERAL
New Highs—1956

Caldwell Linen 2 pf, Consumer Gas, Crestbrook Tim, Premier Trust, Traders Fin A, Wabasso Cot, Watermans Pen

New Lows—1956

Acadia Atlan, Alum of Can 2 pf, Ang Cdn Pulp, Do pf, Anglo Nfld, Argus, Ash Temple, Asbestos, Belding Cort pf, B C Elec 4¾% pf, Do. 4½% pf, B C Forest, Bruck S Mills B, Butterfly Hos, Canada Bread, Cdn Brew, Do. pf, Cdn Celanese, Cdn Gen Sec A, Cdn Silk A, Circle Ban Knit A, Cochrane D, Conf Life, Cons Smelt, Corby's Vot, Dom Oilcloth, Donohue Bros, Fanny Farm, Fleet Mfg, Foundation, Gt Lakes Pap, Hendershot Pap n, Do. 6% pf, Imperial Life, Imperial Tob 6% pf, Indust Accept 4½% pf, Do. 4¼% $2.25 pf, Inglis, John, Labatt, John, Lon Hose A, Maclaren Pr, MacMil & Blo A, Do. B, Mages Sp-G, Massey-H 4½% pf, Milton Brick, Montreal Locom, Nat Steel Car, North Star Oil $2.50 CRP, North West U P, Ont Jockey C, Powell River, PR M Inc Deben, Price Bros pf, Quebec Power, St Law Corp, Do. 5% pf, Scythes & Co., Shawinigan Pr 4½% B, So Can Pr pf, Steinberg 5¼% pf, Sup Pete Ord, Westminster B, Weston G A, Do. B

MINING
New Highs—1956

Amer Stand, Cdn Amer Copp, Coleman B, N Formaque

New Lows—1956

Advocate, Alba, Algom 5% debs, Area, Ascot Met, Aull, Aumacho, Aumaque, Bandowan, Bankeno, Barnat, Barvue, Base Metals, Baska, Bicroft Warr, Bidcop, Bouscadillac, Boymar, Brilund, Broulan Reef, Brunston, Buff Can, Buff Red Lake, Bulolo Gold, Burnt Hill, Camp Chib, Cdn Lith, Cdn Mal, Canam, Can-Erin, Can-Met, Do. Warr, Cen Pat, Chem Res, Chesterville, Chib Expl, Chib K'rand, Chib Min, Chimo G, Coast Cop, Coin Lake, Conro, Cons Bi-Ore, Cons Callinan, Cons C Cad, Cons Denison Warr, Cons Discovery, Cons Howey, Cons Marbenor, Cons Morrison, Cons Moshe?, Cons Negus, Cons Northland, Cons Pershcourt, Cons Red Poplar, Cons San'rm, Cons Smelt, Cons Thor, Cons Tung, Copper Corp, Copper Man, Coulee, Cowichan, Crowpat, Deer Horn, Desmond, Detta Min, Dome M, Dom Asbestos, Donalda, Duvan, East Amph, East Mal, East Sull, East Metals, East Min, Eldrich, Expl All, Iron Bay, Irish Cop, Jackson M, Jacobus, Joburke, Joliet Que, Jonsmith, R J Jowsey, Lake Dufault, Lake Shore, Lexindin, Lingside, Lorado Ur, Louvicourt, Macassa, MacDonald, Magnet, Malartic G, Marcon, Marcus Gold, Maritimes B Warr, Martin McN, McKen R L, McWatters, Merrill Is, Meta Ur, Milliken L, Mindamar, Min-End, Min-Ore, Mogul, Multi-Min, Nama Creek, Nat Ex, Nesbitt L, New Bidl'e, New Delhi, New Lund, New Mylamaque, N Senator, N Thurbois, Nor-Acme, North Inca, N W Vent, Norvalie, Obaska, Oka, O'Leary, Osisko, Pamour P, Parbec, Pardee, Pater, Paymaster, Pickle Crow, Pioneer Gold, Porc Prime, Pronto, Do. Warr, Que Cop, Que Man, Que Met, Quemont, Radiore, Rayrock, Rio-Rupununi, Rix-A'basca, Rockwin, St Michaels, San Antonio, Silver R, Silver Stand, Slocan Duv, South Duf, Stanleigh, Steeloy, Sullivan C, Sylvanite, Fad Met, Faraday, Frobisher, Do. 4% deb, Fundy Bay, Geo-Scient, Giant Mascot, Gold Crest, Gold Man, Goldfield Uran, Graham B, Grandines, Granduc, Greyhawk Uran, Gulf Lead, Head of Lakes, Headway, Tazin, Tiari, Towagmac, Trans Can Ex, Trans Res, Trinity, United Asb, Un-Estella, Valor, Vico, Violamac, Waite Amulet, Windw'd, Yale, Y'ke Bear, Yukeno

OILS
New Highs—1956

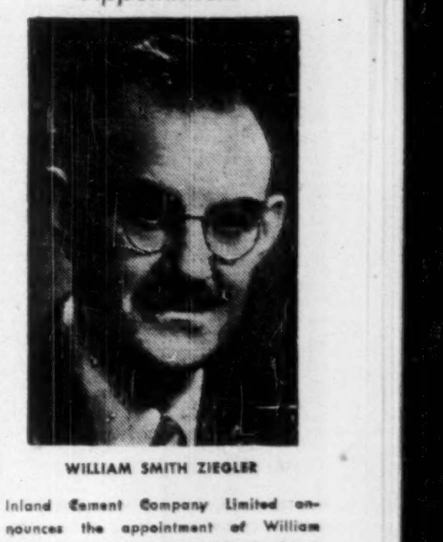
Com Min'ls, New Chamberlain

New Lows—1956

Basco, Cent Explor, Gateway, Israel Cont, Jupiter, Liberal, Northcal, Permo, Peruvian, Ridgeway, Sapphire, Do. 5% debs, Sparmac, Souris Val, Tansfield, Trend Pete, Vandoo, West Ashley, Wilrich

ANNOUNCEMENT

Inland Cement Appointment



WILLIAM SMITH ZIEGLER

Inland Cement Company Limited announces the appointment of William Smith Ziegler as Executive Vice-President of the Company, effective immediately.

Mr. Ziegler was born in Calgary and educated in Calgary and Edmonton. Leaving the University of Alberta in 1939 for the Army he served overseas in various European theatres of war and at the age of thirty-two became one of the youngest Brigadiers in the Canadian Army. For his distinguished war services he was awarded the C.B.E., D.S.O., Golden Aristion Andrius (Greece) and Commander of the Order of Oranje Nassau with Swords (Holland).

After the cessation of hostilities, Mr. Ziegler served for five years with the Control Commission for Germany, in various senior administrative positions.

He joined Canadian National Railways in April, 1951, and, after a series of promotions through various administrative and executive positions in Montreal, Winnipeg and Newfoundland, was appointed Assistant Vice-President in Montreal in May, 1955, which position he occupied until joining Inland Cement.

Mr. Ziegler is a Registered Professional Engineer of the Province of Alberta. He is married to the former Mildred E. Dean of Lake Louise and Edmonton and will be making his home in Edmonton.

Inland Cement also announces that the Edmonton plant continues to operate at a steadily increasing rate and the output of finished cement has now passed the one-million-barrel-a-year mark. It is expected that the plant extensions, designed to double the capacity of the existing plant, will be in operation before the end of 1956.

FEDERAL GRAIN LIMITED
AND
THE ALBERTA PACIFIC GRAIN CO. (1943) LTD.
WINNIPEG — CALGARY
County Elevators located in all Prairie Provinces, and Terminals at Fort William, Port Arthur and Vancouver.
Cereal and Forage Seed Plant at Winnipeg.
We invite your inquiries regarding feed and seedgrain.

K. A. POWELL (CANADA) LTD.
GRAIN SHIPPERS AND EXPORTERS
GRAIN FUTURES
Owners and Operators
Fort William Terminal Elevator Co. Ltd.
and Powell Transports Ltd.
Head Office—563 Grain Exchange, Winnipeg, Man.
Affiliated Companies—Fort William, Ont., Montreal, Que., Vancouver, B.C.

N. M. PATERSON & SONS LIMITED
Grain Division
Grain & Coal Merchant
Steamship Division
Carriers of All Bulk Cargoes
Fort William, Ont. Winnipeg, Man. Montreal, P.Q

UNITED GRAIN GROWERS LIMITED
50,000 Farmer-Owners with an equity in the company of over $9,000,000.
Over 685 Country Elevators in Manitoba, Saskatchewan and Alberta.
TERMINAL ELEVATORS AT PORT ARTHUR AND VANCOUVER.

UNITED GRAIN GROWERS LTD.
CALGARY — REGINA — WINNIPEG — SASKATOON — EDMONTON

Market Comment

What stocks and bonds are doing and what prominent observers say

More and more market analysts have been climbing onto the bear bandwagon in the last week. Although very few are advising liquidation of investment-type and established growth-type stocks, many are now recommending speedy disposal — even at current depressed prices — of speculative issues.

The feeling is pretty general that stocks are going lower. Certainly more and more people are talking about the adverse effects of tighter money. Regardless of the possible longer-term healthy effects of such a move, it is definitely exerting a cumulative adverse effect on the market now.

An enlightening example of the market atmosphere prevailing at the moment was the action in Coldstream Copper stock this week following announcement of a fabulous 30-foot ore intersection assaying 14% copper and a second 20-ft. intersection that looked like 4% to 5% copper from visual inspection. The best the stock could do on the day of the announcement was to add some 9c a share (to $1.52) on a 144,000-share turnover. In a reasonably good speculative market atmosphere such exciting drill-hole news on a developing mine situation like that of Coldstream's would be good enough to tack 50-75c a share onto the market price of the stock.

One board-room habitué remarked in a downtown Toronto brokerage house this week. "I wouldn't buy it if it was diamonds."

This pretty well echoes the sentiment of most traders at the moment.

* * * *

E. S. MILES: Burns Bros & Co. (Toronto)

It is seldom easy to identify single causes for movements in the stock market. Recent weakness in the U.S. and Canadian stock markets has been variously laid to U.S. pre-election jitters, the Suez crisis and tight money.

Probably the strongest single factor influencing stock prices today is tight money. Following a period of several years duration in which most stock prices have risen considerably faster than earnings and dividends, common stocks are now having to compete with some extremely attractive yields available on other forms of investments.

Accordingly, it is not surprising to see sporadic signs of weakness in the market such as occurred recently. Since there is no indication of easier interest rates in the offing, the influence of tight money on the stock market is likely to continue and it would appear quite possible that further market weakness will be seen in the months ahead.

Under such circumstances, we consider a conservative investment policy warranted. This implies giving greater weight to fixed income securities for the present although common stocks should still form the underlying basis of most long-term investment portfolios.

* * * *

R. S. C. DONALD; The Western City Co. (Vancouver)

The forces which currently discourage investors — tight money, electoral uncertainties, and international disturbances — appear to preclude any considerable advance in the general level of stock prices at present. On the other hand, the strength that can be observed in many important industries, especially steel and automobiles, together with the great backlog of government and corporate expansion projects, makes a major setback most improbable unless some unlikely surprise shatters investment confidence.

If the market continues to move sideways with the Industrials index never moving much more than 10% from present levels, as has been the case for a year already, the problems of selection, security and adequate income will remain of prime importance.

So far as industry selection is concerned, it is increasingly clear that the forest industries should in general be avoided for the present, though their long-term prospects remain excellent. Oil and gas stocks, together with steels, some of the Western public utilities, some retail distribution issues, and several of the leading uraniums seem likely to give superior performances in the next year or two.

For conservative investors, a number of recent issues of convertible debentures offer a high degree of security together with good growth prospects and adequate income. Though the investor has to forego the 20% tax credit, this combination of advantages is still very attractive.

* * * *

GREENSHIELDS & CO. (Montreal)

The third quarter of 1956 stands out as the best so far in Canada's economic history and prospects for the fourth quarter appear equally favorable. Record outlays for new plant and equipment, running some 30% above 1955, are being accompanied by full employment and higher wages.

With labor income at a new peak and with a turn for the better in the farm situation, sales of consumer goods are rising and together with the larger capital outlays, they are reflected in both increased industrial production and mounting imports. Indeed, if anything is wrong with the Canadian economy, it is the somewhat alarming pace of its expansion, which has called for a policy of credit restraint on the part of monetary authorities.

The hesitant performance of the stock market in recent weeks may be attributed to several causes, but primarily it must be linked to these measures of restraint and to the resulting conditions of tight money. Higher bond yields as well as attractive new issues of convertibles are causing some switching from common stocks and thus bringing pressure on the market. However, when assessing the effects of restrictive credit policies, it must be remembered that such policies are flexible and can be reversed once the aim of avoiding dangerous over-expansion is attained. Also, it may be pointed out, that if the main industrial projects are stretched out over a longer period of time, as a consequence of present money conditions, this should ensure demand for manpower and capital goods in coming years and thus provide a stabilizing factor for the future.

The Suez crisis is another factor which is causing a reappraisal by investors. Its impact on the Canadian economy is favorable for the oil industry which has acquired a new stature as a result of the Middle East situation. Should shipments through the Suez Canal be totally or partially interrupted, the redistribution of oil supplies will necessitate the fullest use of the Trans-Mountain and Interprovincial pipelines to transport a higher tonnage of Canadian oil to the Pacific coast and to the U.S. Middle West. In any case, current prospects are enhanced by the likelihood of higher tanker rates while, for the longer term, the increased interest shown by international oil companies in Canadian land holdings should result in a stepping up of exploration activities.

Finally, another political uncertainty is provided by the U.S. presidential election, which is by no means a foregone conclusion. With so many issues in the balance, it would not be surprising if many investors remained on the sidelines during the next few weeks.

Trading may therefore continue to be cautious and irregular but there seems to be no reason to take a pessimistic view of the market as long as the outlook for earnings and dividends remains as favorable as it is now and as long as business has to be restrained rather than stimulated.

Frobisher Plows Assets Into Producing Mines

A pattern of participation in established mining ventures and limitation of exploration is evolving for **Frobisher Ltd.** which has issued a mid-year report to shareholders.

The report shows that three subsidiary companies began milling operations in the first half of 1956.

Assets of the company are being plowed into producing operations to establish a base of future revenue. Frobisher entered 1956 in a stronger financial position than for some years in the past.

Production starts by the three subsidiary firms in this year's first half reflect this new policy.

Moving into the producing stage were: **Kilembe Mines Ltd.** in Uganda, British East Africa, which was milling more than 1,100 tons of copper-cobalt daily in mid-July; **Northern Mining Co.** in Greenland which started production of lead and zinc concentrates in early spring; and **Rainville Mines Ltd.** in the Val d'Or area of Quebec which stepped out as the newest Canadian copper producer with a 400-ton concentrator.

Another firm, **Sukulu Mines Ltd.** was formed to develop apatite and columbium deposits near Tororo, Uganda, by an agreement among **Uganda Development Corp., Olin-Mathieson Chemical Corp.** and Frobisher. Mineral concessions held by this company may contain the world's largest known source of columbium, according to A. J. Anderson, Frobisher president.

Included in other interests of Frobisher are:

United Keno Hill Mines where a substantial tonnage of high-grade ore has been developed on the upper levels of the Calumet Mine.

Giant Yellowknife Gold Mines with development at this gold producer during the first half of 1956 continuing to add tonnages of high-grade ore to the proven reserves which now show more contained gold than at any time in the company's history. Production has shown improvement over the corresponding six-month period of 1955.

Seal Lake concession which features an agreement entered into with **Kennco Explorations (Canada) Ltd.** — a subsidiary of **Kennecott Copper Corp.** — for a program of development work on Frobisher's Labrador copper concession. Under terms of the agreement, Kennco will be in charge of this work. Investigation of the uranium possibilities of Frobisher's 290-square mile tract exempted from the Kennco agreement is continuing.

Wesfrob Mines Limited, a company formed in February, 1956, to acquire the Tassoo copper-magnetite deposits on the Queen Charlotte Islands, B. C.

* * *

Jellicoe Plans Geophysical Work

Mapping and geophysical work is to be done on the 100-claim group of **Jellicoe Mines** in the Shebandowan area where copper-bearing fractures in diorite were discovered. E. M. Dillman, president, announces. Diamond drilling is expected to follow within a month.

The copper-bearing fractures have been traced for about half a mile and range in width from two to 15 ft. They occur in a zone about 100 ft. wide.

Operating Profit For McKenzie Gold

McKenzie Red Lake Gold Mines has been showing a small operating profit since July 1, Murray Watts, general manager, reports. In the first half of the year, the mine had an operating loss of $28,000.

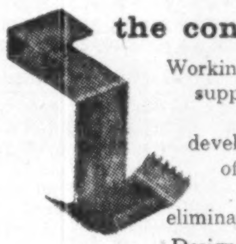
However, higher operating costs are expected with development work seeking new ore accelerating. Five headings are advancing at deeper levels from 850 ft. to 1,600 ft.

The drive west on the 1,450 ft. level to intersect the downward extension of the 1,270 stope structure has cut previously-indicated ore. On the 1,250 ft. level a 400 ft. crosscut has encountered ore.

Improved fastening methods created and developed by completely integrated Canadian company

"Imagination is given the reins" at the Hamilton plant of Dominion Fasteners Limited. Here, through a combination of up-to-date facilities and creative personnel, this Canadian company is constantly inventing, developing and producing better fastening methods for industry.

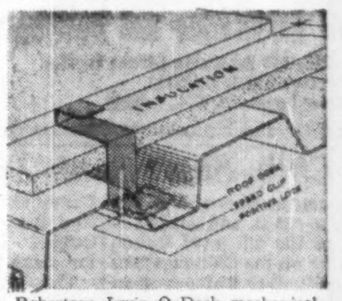
Manufacturers of the famous line of SPEED NUT brand spring tension fasteners, Dominion Fasteners Limited are always ready and able to provide any industry with an efficient and economical solution to any attachment problem.



here's an example of how the construction industry profits . . .

Working with ROBERTSON-IRWIN LIMITED, a major supplier of steel roof deck to the Canadian construction industry, Dominion Fasteners Limited created and developed a new type SPEED CLIP for the attachment of insulation to roof deck. The precarious fire hazard associated with former methods was completely eliminated . . . as well as many other installation problems.

Designed and developed entirely in Canada by Canadians, this new addition to the SPEED NUT family of over 6000 types and sizes of fasteners is now being adopted in the U.S.A.



Robertson-Irwin Q-Deck mechanical insulation fastening method

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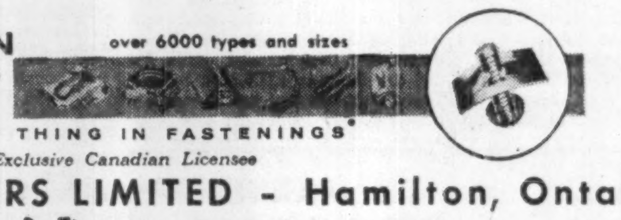

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PARTS AND SERVICE are the bellyaches of the trucking business, and we're the doctors. No gripes when you deal with White-Autocar representatives. Service is fast, and good (but good; our mechanics are factory-trained), and the parts stock is unexcelled. Which is as it should be, fellows; you just have to have fast action to keep you in business.

BELLYACHES

YOU'RE A TRUCKER, a fine big hunk of man. Big hearted, big spirited. You expect a lot, and you do a lot. For this, you keep yourself in shape. Up at six, do some nip-ups, have a cold bath (no doubt) and get to the breakfast table as hungry as a hunter. Then, off to the shop to do two days' work in one.

That's you we're talking about, isn't it?

But once in a while the old physique goes a bit wrong. Something inside zigs when it should have zagged. Something slipped a cog. The old innards get a bit of a cramp; the old digestion goes a bit wrong. You wind up with a bellyache.

It happens to the best of us.

Same with trucks. With a White or an Autocar, you've got a fine big powerful machine, ready and willing, year after year, mile after mile, load after load, to do its work and more. But some day, some year, after more loads and more miles and more work than you've any right to expect, even from a White or an Autocar, something'll give.

So treat it right, won't you?

You bought the best—treat it with the best. Use genuine White and Autocar replacements, and

YOU'LL HAVE NO BELLYACHES!

THE WHITE MOTOR COMPANY OF CANADA LIMITED, TORONTO

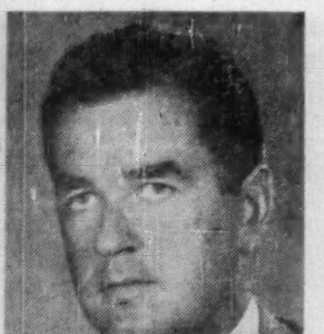
White Autocar

Factory Branches and Distributors Throughout Canada

FOR MORE THAN 55 YEARS THE GREATEST NAME IN TRUCKS

ANNOUNCEMENT

F. N. YOUNGMAN



S. H. WALLACE

Election of Frank N. Youngman and Stuart H. Wallace to the Board of Directors, Burrard Dry Dock Company Limited, is announced by President Hon. Clarence Wallace.

Mr. Youngman has been associated with the pulp and paper industry in Canada for 30 years and is Chairman of the Board of Directors and of the Executive Committee of Crown Zellerbach Canada Limited.

Mr. S. H. Wallace, a graduate of Dalhousie University Law School, is a partner in the law firm of Messrs. Russell and Du Moulin.

MENTOR EXPLORATION AND DEVELOPMENT CO. LIMITED

NOTICE TO ALL REGISTERED AND UNREGISTERED SHAREHOLDERS

Since the last Annual Report, dated June 15th, 1956, was sent to shareholders, important developments have taken place in connection with two of the major activities of your Company.

Details will be sent upon application to—

Mentor Exploration and Development Co. Limited
Suite 1010, 100 Adelaide Street West,
Toronto 1, Ontario.
Telephone No. EM. 4-3603

Taking Stock

What's going on in the mining and oil markets — the facts and rumors.

Rumors of official concern over stock-market credit as found in margin buying of lower-priced mines and oils briefly knocked out props under mining issues. Issues, particularly those which featured the winter and spring boom in copper and nickel interest, dropped sharply under brisk selling and a shortage of buyers.

The spark that set off two days of decline was a "leak" that stock exchange officials had been called to a meeting with Bank of Canada officials. Talk was that an increase in margin requirement was imminent. But after the meeting it was announced that no such action was planned. The rumors and speculation were enough for margin buyers.

Still a depressing factor, despite some signs of renewed buying interest, is talk of a crackdown on accounts which would cut back on speculators' activities — the backbone of mining markets.

Here's a table showing how some of the more active issues dropped and partially recovered.

	Latest Price $	This Week's Low $	Sept. 14 $	1956 High $	1956 Low $
Advocate	4.50	4.30	4.65	5.50	4.30
Belcher	2.20	2.05	2.55	4.25	1.10
Bouzan	1.67	1.45	2.05	3.85	1.45
Chib. Jaculet	4.30	4.20	5.25	6.15	3.45
C. Halliwell	1.60	1.50	1.90	3.75	.44
C. Regcourt	.97	.92	1.27	1.39	.45
Irish Copper	2.23	2.21	2.55	3.85	2.21
Norpax	1.72	1.60	1.87	2.00	.46
North Rankin	1.29	1.21	1.38	1.67	.80
Temagami	5.00	5.00	6.10	9.00	2.25
Willroy	2.55	2.55	2.90	3.40	2.17

* * * *

THE BUZZ IN BOARD ROOMS — is about the screams of anguish from speculators currently receiving calls for more margin. Customers' men have been ordered to make sure that accounts they handle are in good shape and not over-extended. The lower trading favorites drop, the more this policy is accentuated.

Only a handful of issues stood out against the declining trend. Among the penny speculatives showing strength was **Aumacho River** which bounced ahead to 41c from about 35c a week ago. Activity was brisk with rumors circulating about a deal with a U. S. firm for its lithium property and favorable results from a New Brunswick property.

Generally, mines can't move against general decline in market. **Coldstream Copper** with its almost 14% copper across 30 ft. in a new zone is only able to chalk up a 9c gain at $1.53 although trading very heavy. Traders and speculators flip in and out of companies with good news in an effort to make a profit to cover losses on other holdings.

* * * *

In all the confusion of declining mining issues a handful of gold producers showed some strength. **Giant Yellowknife** edged ahead to $5.65 from $5.50. This issue has come up from $4.50 . . . **Macleod-Cockshutt** also firms to $1.32 from $1.25, later slips to $1.23.

Even good news is being ignored. **Coulee Lead and Zinc** and **Headway Red Lake** caught in decline despite news that process being worked out to treat their columbium ores. Coulee at 87c is down from $1.20 and Headway at 83c is off from $1.10.

Rumors that **McIntyre** and **Noranda** are interested in financing **Milliken Lake** to uranium production circulating on the street. Milliken at $1.28 compares with $1.60 recently. Giant of Canadian mining, McIntyre, at $81½ is down from $86 recently as it slides in line with falling industrial markets. Noranda at $61½ compares with recent price of $64.

* * * *

Rising prices of metals and strong world demand are pointing to higher earnings for many Canadian metal producers. **John M. Easson & Co.,** a Toronto brokerage house, has estimated 1956 earnings for some of the leading producers.

Here are some where estimated earnings are lower than last year's profit. These are **Consolidated Mining and Smelting** with estimated net of $1.75 a share, down from $2.01; **Falconbridge Nickel** at $1.90 a share, down from $2.15; and **Quemont** at $2 a share, off from $2.32. Cominco shares currently trade at $30⅛ with high for the year $38 and low, $29. Falconbridge shares at $37 compare with a high of $44 and a low of $29. Quemont at $23¼ compares with a range of $30-$23.

Other estimates include **East Sullivan** at 70c a share, up from 64c (currently trading at $5.50); **Golden Manitou,** 18c a share, as against 13c (stock at $2.10); **Normetal,** 85c a share, as against 83c (stock trading at $6.70); **Steep Rock,** $1.65 a share, up from $1.14 in 1955 (market price $19⅞); **United Keno Hill,** 75c a share, as against 64c in 1955 (stock trades at $6).

* * * *

ON THE "BLACK GOLD" FRONT — Western oil and gas issues appeared to fare slightly better than the rest of the market in their ability to withstand selling pressure. However, **Calgary and Edmonton** at $27 compares with $29¼ a week ago although company reported an increase in net profit to more than $1 million from about $929,000 in the previous year.

Banff Oils and **Scurry-Rainbow** attracting attention with rumors of a forthcoming merger. Street talk is an exchange of 5/6 of a Scurry share for one Banff. At $3.65 Banff is down from about $3.75 early this month and Scurry at $3.55, compares with $3.70 following a sharp upward flip about two weeks ago.

Marriage planned for **Del Rio** and **Central Leduc** with three shares of Central to be exchanged for four Del Rio. Central Leduc at $4.60 compares with $4.90 recently and Del Rio at $3.70 is off from $3.85.

Two New Finds Indicated Cons. Halliwell Reports

Continuing good grades from drilling on the main zone and two new finds nearby highlight activity on the Haiti property of **Consolidated Halliwell Ltd.,** officials report.

Three holes have cut ore averaging as high as 3.75% copper on the Meme or No. 2 main zone in the Terre Neuve area.

A new zone, three miles to the west, has been indicated in the Cassius area where five holes to date have outlined it for 800 ft.

Second new development is a find in the Bresillac area, 2½ miles northwest of Terre Neuve, where surface trenching gave values of 3% copper over 10 ft. A packsack drill is to be moved in to explore the discovery further, the company says.

On the main zone, hole No. 72 on the easterly limits of the ore body gave 3.75% copper over 45 ft. This hole is about centre of the 600-ft. wide ore body.

On the western limits, hole No. 54A cut 1.36% copper over 55 ft. and hole No. 70 cut 2.53% copper over 55 ft. Both sections are still open.

Five holes have been drilled in the Cassius area. Hole No. 2 averaged 1.15% copper over 50.3 ft. A strong magnetite occurrence is reported in the zone. In hole No. 2, from 125 to 150 ft., results were 1.54% copper and 39.7% iron.

Officials report that the adit on the main zone is now in 216 ft. Four drills are working the ore body, concentrating on the west, north and northeast sides. One drill is in the Cassius area.

Spend $3 Million Work To Output Quatsino Iron Ore

The Vancouver Island iron ore property of **Quatsino Copper-Gold Mines Ltd.** is being moved toward a production start by a nine-month, $3 million construction and development program, officials report.

An 8½-mile road extension, first step in the program, is more than half completed.

Mannix Ltd. is financing and managing the program through **Empire Development Co.,** which was formed for this purpose.

Quatsino will have a 40% carried interest in the plant and in earnings after Mannix has been reimbursed from earnings for advances. Objective is a monthly shipping rate of 40,000 tons of beneficiated ore. Reserves were previously placed at over 1.5 million tons of ore.

Cut 13.9% Copper Possible New Zone Coldstream Copper

Coldstream Copper has cut a 30 ft. intersection of 13.91% copper in what appears to be a new ore zone between the already known north and central zones on its property in the Shebandowan area.

Drill hole No. 4,003, running horizontally on the fourth level 400 ft. east of the shaft intersected the 13.91% copper from 70 to 100 ft. Over all, the hole cut 85 ft. of 7.22% copper—from 70 ft. to 155 ft.

It is planned to drill this new zone at 50 ft. intervals on the level.

This hole was the first drilled on the fourth level where cross-cutting has been underway.

Que. Chib. Shaft Sunk To 625 Ft.

A three-compartment shaft has been sunk to 625 ft. and cutting of the brow of the 4th level station is under way on the Chibougamau property of **Quebec Chibougamau Goldfields Ltd.,** Philip M. Malouf, president, announces.

The company plans to drill laterally from the shaft stations into the ore zone to locate the drives on the various levels.

Surface diamond drilling on the northeast claim has shown that the main shear structure of the **Campbell Chibougamau** Cedar Bay ore zone extends through to Quebec Chibougamau property for some 2,200 ft.

The shear structure with greenstone porphyry dikes and copper values has been intersected in three diamond drill holes. Hole 195 cut a 22.5 ft mineralized zone, assaying 1.05% copper, or 12.5 ft. assaying 1.57% copper. Hole 199 cut 6.0 ft. assaying 1.40% copper. These intersections are at vertical depth of 500 to 300 ft.

Option On Aumacho Lithium U.S. Firm Would Pay $6 Mill.

An option to buy the Beardmore, Ont. lithium property of **Aumacho River Mines Ltd.** for $6 million has been signed by a U. S. holding company.

Aumacho shareholders will be asked to approve the deal shortly, President F. A. Boylen told The Post.

The buyer, believed to have holdings in the U. S. metals industry, plans a 1,000-ton capacity mill on the northwestern Ontario property. Mill construction and further development work are to begin early in 1957.

Aumacho will receive an option payment of $50,000 cash now and a down payment of $500,000 when the deal is closed. The purchase will become firm within one year and total purchase price will be paid over three years.

The price is equivalent to $2 a share for Aumacho which has 3 million common shares issued.

Tests have shown that recovery would be 90% at -35 grind. There is less than ½ of 1% iron in the ore.

Drilling done by Aumacho has built up reserves of 760,000 tons of ore averaging 1.63% lithia. Officials point out that the property has not yet been fully developed.

No. 1 and No. 5 veins are still open to the west and at depth.

The No. 5 vein dips under the No. 1 and 2 veins and officials believe it may continue downwards.

The property, located between Nipigon and Beardmore, is on an existing road and within two miles of a rail line.

Aumacho, which holds other prospects in N. B., Ontario and Quebec, now plans development of its Chibougamau area copper property.

N. Rankin Raise 8.90% Nickel

The first level raise at North Rankin Nickel Mines Ltd. has encountered an average of 8.98% nickel and 1.74% copper in the first 50 ft., company officials report.

Work is being done on the 200-ft. level of the property on Rankin Inlet.

The company plans to start production about March next year. Mill construction is under way.

Grade Rises Costs Down At La Luz

Operating profit of **La Luz Mines Ltd.** was $413,398 in the nine-month period ending June 30, 1956, an increase of $161,000 over the same period a year ago, A. G. Fulton, secretary, says in a report to shareholders.

Improvement was due to an increase in grade of ore treated and a reduction of operating costs at the company's gold mine in Nicaragua.

There were 517,875 tons milled in the period and 51,627 oz. of gold produced. Average price per oz. of gold was $34.96 and operating profit per ton milled was 80c.

During the past three months, the mine was unable to produce the required daily tonnage because of a cave-in in the main orepass system, Mr. Fulton said. The orepass is now back in use with normal production expected for the rest of the year.

The company has purchased most of the equipment for its planned copper mill at the Rosita mine. Concentrates will be shipped from a dock on the Caribbean coast.

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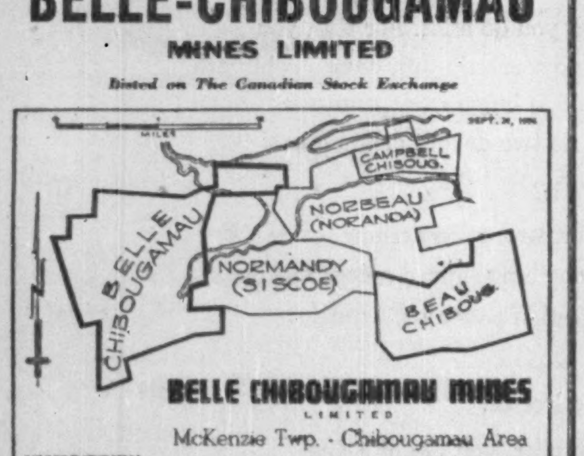

- Information of vital importance and of a very special interest to all shareholders is expected to be released at the company's annual meeting to be held shortly.
- The company has acquired a substantial interest in Beau Chibougaman Mines Limited and Centre Hill Mines Limited.
- Your company has also undertaken magnetometer work and drilling on the Saussure Township property approximately ten miles west of Opemiska.
- In addition a crew of men is now carrying out preliminary prospecting on the company's property located in Davost Township, Chibougaman.

Shareholders holding certificates not in their own names are urged to send them immediately to the Crown Trust Company, 302 Bay Street, Toronto, Ontario, for proper registration into their own names so that they may receive all official progress reports that will be issued by the company.

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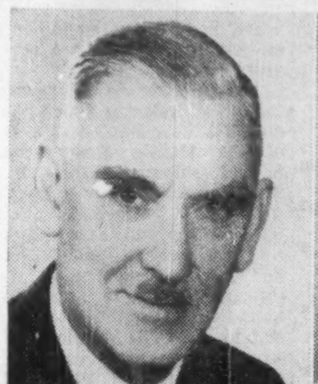

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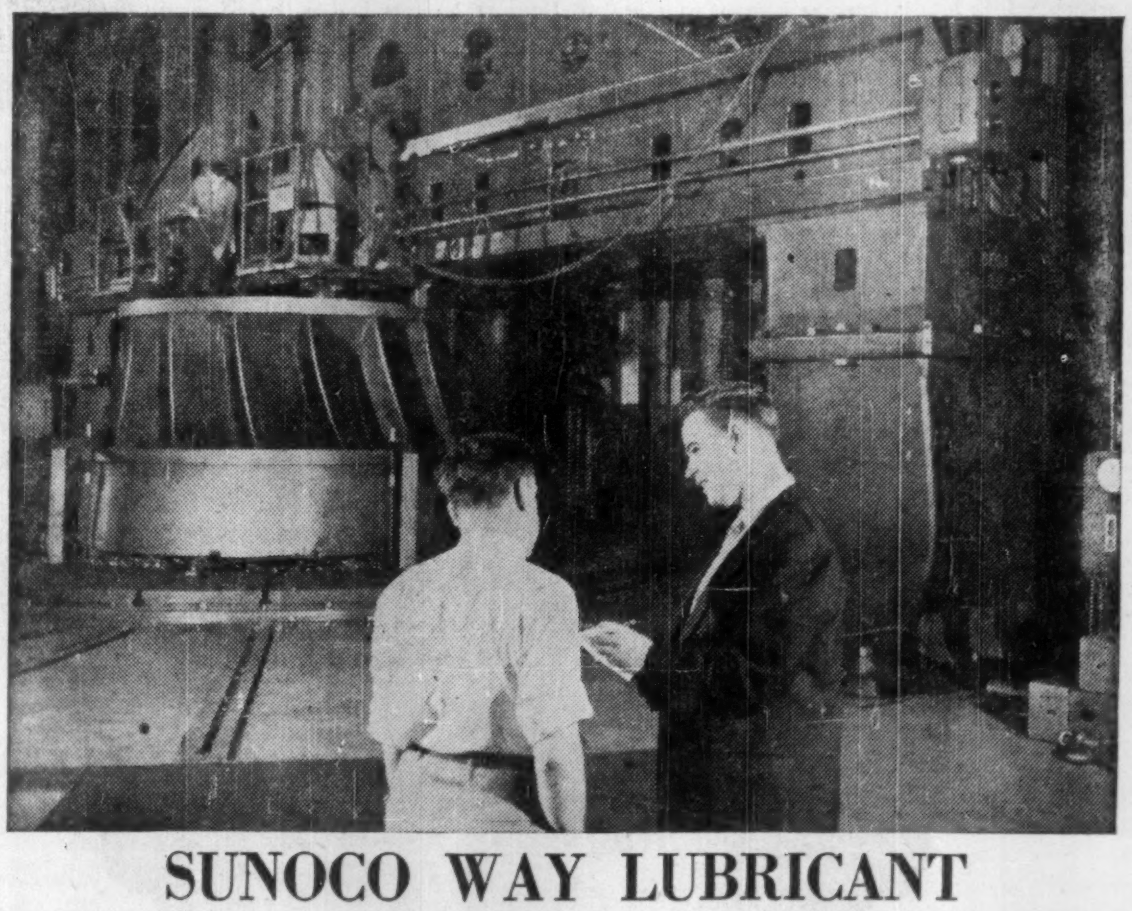
Mr. Hyatt formerly President of Wrigley Printing Co. Ltd. brings to the new company his widely specialized knowledge in the book manufacturing field.

Mr. McCracken, formerly Sales Manager of Lumberman, a specialist in designing and manufacturing business forms, brings many years of sales management experience to this new British Columbia enterprise.

Mr. Clippingdale, formerly President of The Lumberman Printing Co. Ltd., has been actively connected with the commercial printing industry in Vancouver since 1919.

In the near future the new company, Evergreen Press Ltd. plans to amalgamate the staff and equipment of the three firms under one roof.



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Others Copy Our Mining Know-How

Two factors have changed both the pace and the pattern of mining in Canada. Uranium and electronics.

From the air and on foot, electronic equipment is now speeding prospecting. Other countries are copying Canadian methods.

But the electronics industry and the mining industry must be cautious. They have much to learn, says Dr. G. G. Eichholz, radioactivity division, Department of Mines and Technical Surveys, Ottawa.

Here is his assessment:

By DR. G. G. EICHHOLZ

With the advent of uranium as one of the looked-for and highly-prized substances under our soil, the Geiger counter has become a symbol for the never-ending search for valuable mineral finds.

It has also spear-headed the use of electronic equipment by the prospector and thus its connection with the uranium industry is no accident.

It is probably fair to say that the postwar interest in uranium which has brought much new blood and new capital into the mining industry has helped to break through the crust of one of the more conservative industries and win slow acceptances for electronic equipment and "gadgets" in this vital field of our economy.

The future place of electronics

DR. G. G. EICHHOLZ

in mining and mineral dressing will largely depend on the approach taken by the electronics industry. The present article is mainly concerned with some of the applications adapted so far.

There are three phases through which a mineral must go before the desired constituent can be recovered:

— It must be located by a prospector or geologist in a deposit of mineable size.

— Its value and quantity must be determined by exploration of the deposit, sampling and assaying.

— It must be separated from its surrounding gangue and "country rock" by a metallurgical process.

At each of these stages greater simplicity and better accuracy have often been achieved by the use of electronic devices and control circuits. This has been particularly the case for uranium, both because the prospecting and mining for this element have become established in the last few years only, and were thus free to utilize some of the most recent techniques, and because of some special properties peculiar to uranium and only a few other less often encountered substances.

Searching from the air

This peculiarity is the emission of penetrating invisible radiations by uranium and its sister element thorium. By locating the source of radiation it has been possible to pinpoint the occurrence of these elements in a way not possible for any other metal. Whereas a prospector for gold must trust his luck and his eyesight, prospecting for uranium is frequently carried out by flying over the ground at a height of several hundred feet. Admittedly, in the end the ground still has to be covered on foot for a detailed geological examination, but many barren areas can be eliminated by a preliminary aerial survey, thus saving much wasted effort and permitting a much faster coverage of the area being mapped.

Radiation surveys are frequently supplemented by electromagnetic, photographic and gravity survey methods, all of which have benefited largely from the greater accuracy, reliability and compactness made possible by modern electronic methods.

There are two types of radiation detectors that are normally employed in the field, the Geiger-Muller tube detector and the scintillation detector. The Geiger-Muller tube is a gas-filled tube containing two metallic electrodes, one usually in the form of a thin wire, the other a metal sheet surrounding the wire.

Between these two electrodes a high voltage of the order of 700-1,000 volts is maintained and when the tube is exposed to penetrating radiations an electric discharge takes place, giving rise to an electric pulse at the tube terminals. The more intense the radiation the more pulses will appear. By counting the number of pulses produced in a given time a measure of the strength of the radiation source is obtained.

The rate of occurrence of the pulses may be judged by listening to their "clicks" in an earphone or by indication on a meter.

Sensitive Crystal

The scintillation detector consists of a radiation sensitive crystal which will fluoresce or glow feebly when exposed to penetrating radiations. This faint glow is intensified and turned into electric pulses in a complex electronic tube, called a photomultiplier tube, which is not unlike a small television tube in appearance. The number of electric pulses obtained from the photomultiplier tube is again a measure of the intensity of the radiation to which the crystal is exposed, and can be counted or displayed as a meter reading.

The Geiger counter is basically a simpler device, easier to make and cheaper, and it has, therefore, been especially popular with amateur prospectors. A scintillation detector is more complex and requires a more highly stabilized voltage for good performance. On the other hand its sensitivity to gamma radiation, which is the type of radiation of primary interest to the prospector, is very much greater than that of the Geiger counter and for that reason it is steadily displacing the Geiger counter for professional work. This trend is likely to continue as the professional prospecting team supplants the amateur and grubstake prospector.

Aid From Transistors

Recent developments in the design of radiation detectors have had as their main aim improved reliability, greater compactness and weight. This is being achieved by the use of transistors wherever possible, printed circuit techniques and light alloy containers. Transistorization bids fair to overcome the main source of trouble in portable counters: rapid battery failure. It is also increasing the reliability of units by eliminating sub-miniature radio tubes, long a source of difficulties.

Considerable savings in weight are obtained, an important objective when one considers that a portable counter frequently has to be carried by a prospector over rough terrain for many hours at a time. Many so-called portable instruments of the older kind deserved that term only in the sense that they could be lifted off the ground. It is

For details of other electronic marvels in modern industry, see pp. 49-62.

reasonable to assume that this trend toward lighter and more compact counters will continue, especially as the development of the mining industry calls for ever greater diversification. This offers a special challenge to the electronics industry.

A similar impetus has been given to the development of instruments for airborne surveying. These include scintillation counter instruments, magnetometers and gravity meters, all of which have reached a high stage of development in recent years due to the application of modern electronic design. Investigation of anomalies detected in airborne surveys have resulted among others in the development of a major iron mine and of a columbium deposit, to name just two examples in Canada.

After locating a possible occurrence of a valuable ore deposit, a careful evaluation must be made of the grade of the ore and its extent. This requires examination by a geologist to identify the source mineral, diamond drilling and chemical assaying of representative samples. For radioactive ores visual inspection and purely chemical methods of analyses can be supplemented by electronic methods which result frequently in a considerable saving of time and labor.

Drill holes can be explored by means of bore-hole counters which are specially adapted to be lowered by long cables down a deep and wet hole. These probes must be sturdily constructed and yet give reliable performance under all conditions of humidity, temperature and mechanical shock. Drill cores can be examined on the surface with various scanning detectors.

A PROSPECTOR scans a likely patch of earth-covered rock with a geiger counter. This electronic instrument measures the volume of radiation, thus detects radioactive ore bodies or outcroppings.

Assaying can be done in the field by the use of any of the more reliable portable counters, provided that a firm support is provided which permits the establishment of a fixed spacing and configuration between sample and detector. However such methods cannot usually distinguish between uranium and thorium and are subject to battery fluctuations and other external influences.

For precise assaying a laboratory method is required and for this the beta-gamma method, developed at the Mines Branch, has been adopted throughout Canada. It has also been widely adopted abroad. Its main advantage is that it can distinguish between uranium and thorium.

The equipment consists of a combination of a Geiger counter and scintillation detector arranged for convenient sample handling.

The actual counting and registration of pulses is done in the large electronic units, known as scalers, and the development and improvement of these units has involved some very interesting applications of new electronic tubes and circuits.

A survey of the use of electronic devices in the handling of radioactive ores would not be complete without a reference to the field of instrumentation that is only now opening up in the treatment and beneficiation of ores for the extraction of the desired elements.

Radiation detectors have been used to monitor both the grade of ore fed to the mill and of the waste thrown away. They have been used to explore the behaviour of mill circuits by means of radioactive tracers and to check the radioactivity of leach solutions. They have been adapted to pick out the active uranium ore pieces themselves, thus rejecting the worthless ones, in picker belt systems.

The industrial use of electronic instruments in monitoring and controlling such variables as flowrate, density, acidity pressure and temperature is well known, and can only increase as dependability and ease of maintenance improve. Maintenance is still a common difficulty because of specialist attention that is needed at times but not readily available.

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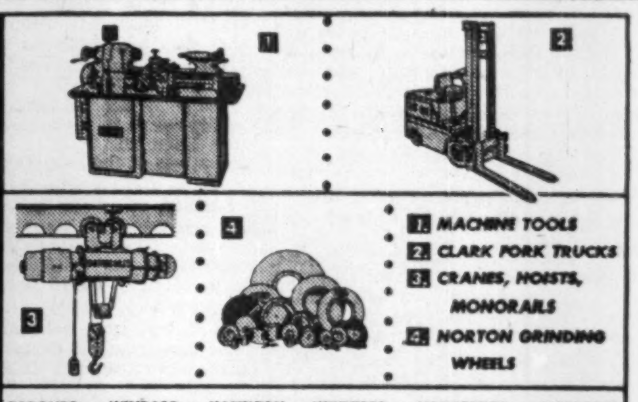

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Single-speed	Ratio 5.14 to 1	5,000 lbs. capacity
Single-speed	Ratio 6.17 to 1	11,000 lbs. capacity
Single-speed	Ratio 6.17 to 1	13,000 lbs. capacity
Single-speed	Ratio 7.20 to 1	15,000 lbs. capacity
Two-speed	Ratio 6.40-8.72 to 1	15,000 lbs. capacity

Two-speed	Ratio 6.50-9.04 to 1	16,000 lbs. capacity
Single-speed	Ratio 7.20 to 1	
Double reduction	Ratio 9.19 to 1	
Single-speed	Ratio 7.17 to 1	18,000 lbs. capacity
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Single-speed	Ratio 6.17 to 1	

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Letter from London by Adelphi

If you will forgive a flash of the obvious may I state that the old British Lion is going through a bad patch. The Lion roars but the Serpent of the Nile merely hisses defiance.

And then to top it Mr. Randolph Churchill is gonged in the opening round of the $64,000 Quiz. He is not often lost for words. This occasion was an exception.

However he is not the only Englishman who is short of words these days. The stock brokers do not know what to answer on the telephone when their clients ask if this is the moment to buy oil shares.

Everyone agrees that the Suez problem will be settled somehow, somewhere, sometime. But when and how? In desperation the brokers suggest that Canadian shares must be a good hedge. Canada has everything. Canada is protected by the North Pole, two oceans and the great friendly republic on the south. We know all about Canada now:

A land with glorious sunshine blest,
Where freedom reigns from East to West.

* * *

Nasser May Smile But Problems Mount

Now for a moment let us turn our eyes upon Egypt. Colonel Nasser may smile and bluster but his problems are mounting with each day that passes. The economic measures invoked against him by the West are beginning to hurt. Egypt has to find other sources of supply, as a result of Western economic measures.

It seems that the Saudis prom[illegible] Nasser $10 million but o[illegible] $5 million has turned up. Nor has Japan, which is one of the principal purchasers of Egyption cotton, shown any marked willingness to finance Egypt's purchases elsewhere.

However, there is no denying that while Russia blandly advises the West to come to terms with Nasser she is doing everything possible to help him continue his defiance. No one has ever denied that the Russians have a sense of humor. In the Tsarist days they produced some of the greatest satirical dramatists in history. It would seem that the womb of satire is still fruitful.

There is no doubt, however, that Prime Minister Eden retains his tough attitude. His detractors like to call him a tailor's dummy, and certainly there has been no falling off in his sartorial elegance, but fundamentally Eden is remarkably tough.

* * *

Crystal Gazers Talk Of Election

Some of the political crystal gazers are saying that if Eden secures a reasonable Suez settlement he will spring an autumn election on the Socialists. Personally I do not agree with the crystal gazers. The trade unions are in a difficult mood and if an election was sprung on the nation it might well be that the electorate would feel that they had better let a Socialist government deal with the labor problems.

Some of the political commentators go so far as to doubt that Eden will lead the Conservatives at the next election. R. A. B. Butler, who was depromoted from the Treasury, has recovered his vigor and it is also rumored that Harold Macmillan has been looking at the door of No. 10 Downing Street with appraising eyes.

However, it is not only in the Conservative Party that there are rumblings. It is noticeable that Aneurin Bevan took no prominent part in the Suez debates. Was that his wish or was it Gaitskell's decision?

* * *

Blackpool Ozone and Bevan's Head

We shall know more about it when shortly the Socialists and trade unions gather for the annual party conference at Blackpool. The air at that famous Lancashire seaside resort is strong and bracing, and it is feared that the ozone may go to Bevan's head instead of his lungs. Nor can we rule out that chirpy Cockney veteran Herbert Morrison who has been relegated to the back benches of the Socialist Party. He is unlikely either to forget or forgive.

In fact we are already hearing that overworked but dramatic saying: "There will soon be a night of the long knives."

On your behalf I shall certainly make the journey to Blackpool and, in this column, will endeavor to give you an impartial picture.

* * *

Black Squad Strike Ends In Handshake

There is a nation-wide sense of relief that the biggest Scottish strike for 20 years came to an end this week. Ten thousand workers have gone back to their jobs following a handshake agreement between the employers and what were known as the 5,000 Black Squad men. The other 5,000 workers were sacked as a result of the Black Squad strike.

The men who struck for a guaranteed minimum wage for a 44-hour week have accepted a compromise. The strikers, however, did not lack a measure of success. The employers have gone a considerable way in conceding that no man's pay would be cut as a result of delays caused by bad weather or difficult working conditions. I am told that there will be new talks with the purpose of agreeing on further compromise.

Chancellor Harold Macmillan has used this settlement to appeal for closer nation-wide partnership between capital and labor. It may be that he will receive a favorable response.

* * *

Memorial Service For Billy Bishop

There was a moving ceremony at St. Paul's Church (Portman Square) when a memorial service was held for Air Marshal Bishop, V.C.

Among those who came to pay tribute to the great airman were the Canadian High Commissioner, Air Chief Marshal Sir Leslie Hollinghurst and and many other high-ranking officials from the American and other embassies. Brig. General Critchley, who so valiantly refused to let blindness subdue his gallant turbulent spirit, spoke with a most moving yet simple eloquence. Somewhere beneath Critchley's rough-riding temperament there is the unexpressed soul of a poet. The other speaker was your London correspondent.

Billy Bishop lived and died in defiance of the gods. He was drawn by an irresistible fascination to the bright eyes of danger. Each time that he flew into aerial combat he knew that the odds on survival were shortening, but his spirit was unconquerable.

Yet there would not have been a memorial service to him in London or even Canada if he had not been spared by that great German ace Baron von Richthofen. They fought a duel in the air like two knights in a tourney. When Bishop had no more ammunition left and was at the mercy of his enemy Richthofen waved his hand and flew away.

It was a simple but moving service in a quaint church off Baker Street near the house in which the mythical Sherlock Holmes was supposed to have lived.

Billy Bishop with his gaiety and sense of adventure would have liked that.

Woodlands Lab of Abitibi Now an Official Tree Farm

PORT ARTHUR — A 40,000 acre Woodlands Laboratory, established four years ago by **Abitibi Power & Paper Co.,** was officially certified as a tree farm in a ceremony sponsored by the Forestry Committees of the Port Arthur and Fort William Chambers of Commerce and the Northwestern Ontario Section of the Canadian Institute of Forestry.

The certificate, awarded by the Canadian Forestry Association, was presented at the Woodlands Laboratory, 60 miles north of Port Arthur by James A. Vance, chairman of the Canadian Forestry Association.

Making the presentation, Mr. Vance said that the CFA is stressing the importance of research and public education in the job of maximizing the harvest from Canada's forests on a perpetual yield basis. He congratulated Abitibi for the job it is doing in both these fields, and expressed confidence that certification of the Woodlands Laboratory as a tree farm would provide new opportunities for contributions to the welfare of Canadian forest industries.

Accepting the certificate on behalf of Abitibi, Chief Forester Jack Matthews described the tree farm movement as "one of the most worthwhile developments to appear on the forestry scene in recent years". He expressed the hope that, in obtaining certification of the Woodlands Laboratory as a tree farm, Abitibi would be encouraging individual woodlot operators to do likewise.

Hon. C. Mapledoram, Minister of Lands and Forests for Ontario, paid tribute to the manner in which the paper companies are developing and protecting the forest resources of Northwestern Ontario. He found it particularly encouraging that Abitibi should be applying the soundest principles of forest management in its own properties entirely voluntarily.

With this kind of example and inspiration, the Minister said, he "hoped to see Northwestern Ontario become the pulp and paper centre of the province."

140,000 Acres Protected

The tree farm movement is a comparatively new one in Canada. The first certification in the country was made in June, 1953 and was awarded to a woodlot owner in Argenteuil County, Que. A total of 107 certificates have been awarded in Ontario alone to individual and corporate woodlot owners, with 34 others approved for certification. This represents a total of nearly 140,000 acres of forest thus protected.

Under the National Tree Farm standards, certification is awarded only to the owner of a woodlot. A minimum of three acres is required, and the owner receiving the certificate agrees to four main conditions:

1. To maintain his woodland for growing forest crops only. This means, for instance, that he will not allow cattle to graze in his forest area.
2. To protect his woods adequately. This would include precautions against fire; provision for access to the area to combat fire; protection against pests, etc.
3. To follow cutting practices which will ensure future forest crops. This means not only providing for regeneration, primarily by natural seeding, but also scientific thinning and harvesting practices designed to improve both quantity and quality of the forest crop.
4. To allow Tree Farm Committee foresters to inspect their certified woodlots. This ensures that the tree farm standards are maintained and also provides for practical counsel on specific situations.

Some of the local tree farm committees have additional qualifications, over and above those set up by the national body. Certified tree farmers receive information booklets and other material which will help them make the most of their woodlots, and in the Canadian Forestry Association records there are already numerous individual examples of the purely monetary gains derived from scientific tree farming.

MARKET COMMENT

The informed opinion of men experienced in market analysjs is given regularly in this investment feature. For profit add their viewpoint to yours. You get them in

THE FINANCIAL POST
Yearly by mail in Canada $6; elsewhere $7

New Atomic Energy Treaty Will Aid Canadian Firms

Canadian industry has been given greatly increased freedom to explore the field of atomic energy with the signing this week of an international agreement on patent rights.

The agreement, signed by the governments of Canada, the U. S. and the U. K., removes the threat of complex and costly litigation that has surrounded many fundamental developments in atomic energy.

More and more industries are encouraged to embark on atomic energy projects, such as building reactors for commercial use, now that possible claims have been put out of court.

The agreement covers all inventions and discoveries for which patents are held or have been applied for by the three governments as of November 15, 1955. They fall into two groups:

—A group of about 50 inventions which arose out of wartime collaboration between the three governments. Known as Combined Policy Committee inventions, patent applications for them have been filed in many cases by all three countries.

—A group of several hundred inventions, for the most part still classified, which were developed independently by one government working within the co-operative arrangement. Patent applications for these have been filed by one government in the country of either one or both of the other two governments.

Under the agreement, the title to Combined Policy Committee inventions is now owned by the government or governments employing the inventor or inventors.

The title to other inventions is exchanged, each government transferring its rights to the government of the country in which they are owned. But each assigning government retains a non-exclusive, irrevocable, paid-up licence on the invention for its own purposes and for purposes of mutual defence.

The exchange gives full rights to each government in its own country and permits it to grant licences to industry in accordance with national policy. A non-discriminating clause in the agreement binds each government to grant licences to nationals of the other governments on the same terms accorded to its own pe[illegible].

The agreement, by eliminating questions of patent infringement, is expected to simplify the ac[illegible]ties of private industry in the field of atomic energy rather than make available processes of major importance. Most of the CPC patents cover the earliest developments in atomic energy.

picking your successor!

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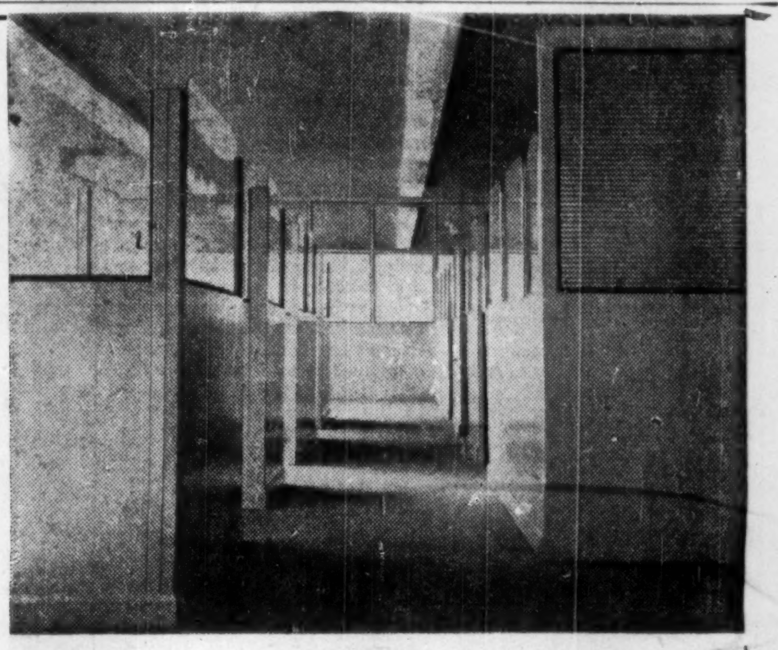
Illustrated are Tayco Montmarte and Montebello partitions installed for the Dept. of Public Works in the Kent Albert Building, Ottawa, Ont.



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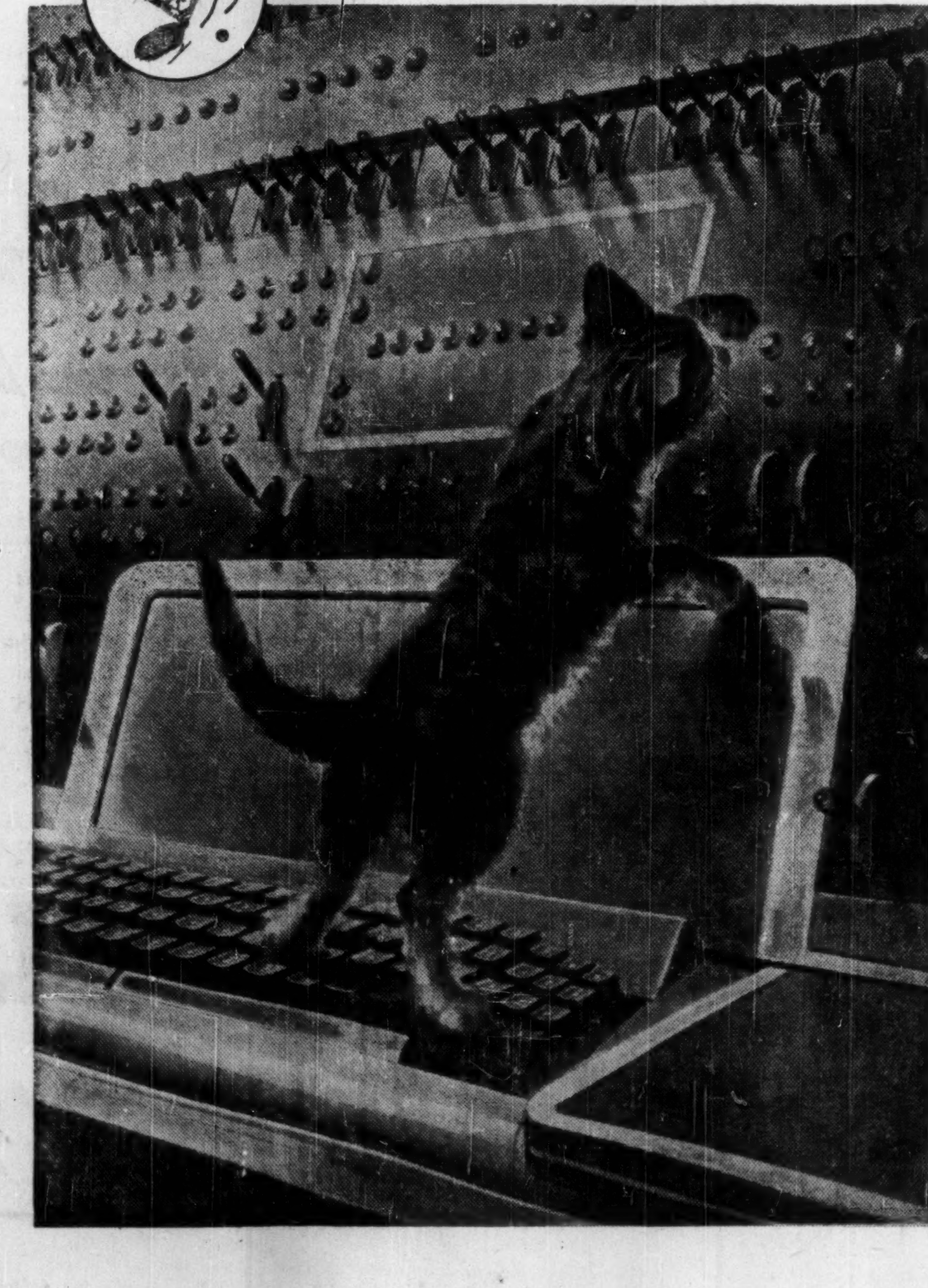

WHAT MAKES CHESSIE'S RAILROAD GROW?

One of a series telling what Chesapeake and Ohio is doing to make this a bigger, better railroad.

Kitten on the keys

At the control panel of Univac, the kitten has her paw on what is going on all over the 5,100 mile route of Chesapeake and Ohio—the first railroad to install a large scale electronic computer system.

Univac provides information as fresh as this morning's sunrise for use by management in planning Chessie's future growth. Projected applications include recording thousands of shipments moved for thousands of C&O customers; accelerated revenue accounting and inventory control of the 65,000 items needed to run the railroad.

Univac is as accurate as it is fast. It performs every mathematical computation twice and if they don't agree, it goes over the operation again. If they still don't agree, it stops work and yells for help.

Every three months Univac goes through the list of Chesapeake and Ohio's 90,000 stockholders, figures how much each should receive at the current $3.50 dividend rate, and writes their checks at the rate of five checks a second.

In half a day it can make up the paychecks for 34,000 C&O employees, figuring what each receives for the number of hours he worked, plus over-time and less withholdings and any other deductions that may be indicated.

Adaptation of large scale electronic computing to railroad operation is another demonstration of Chesapeake and Ohio's willingness and ability to develop fresh techniques in the interest of superior transportation.

And this is just one phase of Chesapeake and Ohio's modernization program. New diesel locomotives, new cars, new track, new piers, new trainferries, new yards, new signals and—most of all—new thinking have made this a new railroad. A modern railroad, geared to the tempo of today—and tomorrow.

Would you like a portfolio of pictures of Chessie and her family? Write to:

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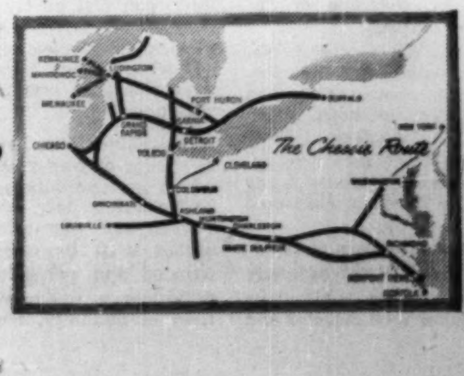

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ELECTRONICS MAGIC WORD

By RODNEY TOUCHE

THE electron is the smallest known particle of matter in the universe. It's at the kernel of the greatest power man has ever unleashed. It promises to be the means of his unbounded progress.

This feature report of The Financial Post is devoted to the art, science and business of electronics.

From electronics new industry is rising; new arts have been spawned; a new way of life is coming. The future means change, not only in the board room but in the studio and the surgery, the laboratory and the living room.

And with the change comes challenge:

- To universities to train the brains so desperately needed.
- To businessmen to back the ideas and dreams.
- To industry to develop the projects of tomorrow.

This report is Canada's first broad measure of our challenge and our accomplishments, written for the businessman by inventors, industrialists, managers, theoreticians and artists, assisted by the Financial Post's editorial staff.

Herewith, a layman's look at modern wizardry.

To begin, a definition.

This tiny, powerful particle

ELECTRONICS is the science of using tiny particles of matter called electrons, of generating, controlling and applying them.

Or, in the words of the 1956 international definition: "That branch of science and technology which deals with a study of the phenomena of conduction of electricity in a vacuum, in a gas and in semi-conductors and with the utilization of devices based on these phenomena."

With electron tubes and the new semi-conductors such as transistors, electric current can be rectified (from ac to dc), amplified, generated and controlled with minute accuracy.

Rectified current plates metals, extracts aluminum from mud and magnesium from sea water, takes dust out of air, dirt out of smoke.

Amplified current makes minute impulses large enough to measure, aids precision balancing and the tracking of vibration, turns radio waves into speech.

Generated current transmits radio waves, joins together materials, speeds the making of plastics.

Controlled current allows obedience to temperature and time, the regulation of machinery, the welding of materials without friction or flame.

And to these basic abilities can be added two more. Light can be turned into electricity and back into light again, allowing the production of X-rays and ultraviolet rays, piercing barriers, penetrating beyond vision, making possible TV.

Has created an industrial giant

FROM THE furnace came music. Inside the red hot oven the temperature was 1,500 deg F. Yet the phonograph was working and working well.

Glass, plastic, copper wire, all the familiar ingredients of electronic apparatus in such heat melt into a puddle. But this phonograph worked.

It was made to show the capabilities of the new heat-resistant components, to prove that with titanium and ceramics electronic assemblies do no fail even in a furnace. And it showed another thing:

That the electronics industry has grown big enough to be meeting and solving problems of this complexity.

How big?

It was in 1922 that Canadian Westinghouse Co. produced the "Aeriola" radio set. They claim it was the first completely Canadian-built set. By 1939, according to an estimate made by the Radio-Electronics-Television Manufacturers Association of Canada, Canadian industry was producing electronic goods with a factory shipment value of just under $20 million.

Today the factory shipment value of products of the electronics industry and services is $505 million per year.

While the gross national product doubled, the electronics industry increased sevenfold over a period of 10 years, according to Retma. Altogether the industry has grown more than three times as fast as the national rate of the gross national product.

It now employs about 25,000 production workers, with an annual payroll of more

Continued on page 50

And multiplied investments

THESE are typical Canadian electronics firms. This is how their electronic divisions have grown.

Beama Engineering: Started 1953, expect 1956 sales increase of $1 million.

Canadian Aviation Electronics: 1955 sales 11 times 1950's.

Canadian General Electric: Electronic 1955 sales about $30 million more than 1950.

Canadian Westinghouse: Started division 1951, now 1,200 workers.

Collins Radio of Canada: Started 1953, now $4 million annual sales.

Computing Devices of Canada: 1951 sales $300,000, expect $4 million in 1956.

Dominion Electrohome Industries: Sales grew five times in last five years.

Electrodesign: Started 1948 when sales $7,000; in 1956, $500,000.

Electronic Associates: Sales three times multiplied in last five years.

Hellerman of Canada: Sales up 300% in last 18 months.

John Herring: Sales multiplied seven times in last 10 years.

Leonard Electric: Sales multiplied five times since 1950.

Measurement Engineering: 1950 sales, $190,000; 1956 sales (est.), $1.2 million.

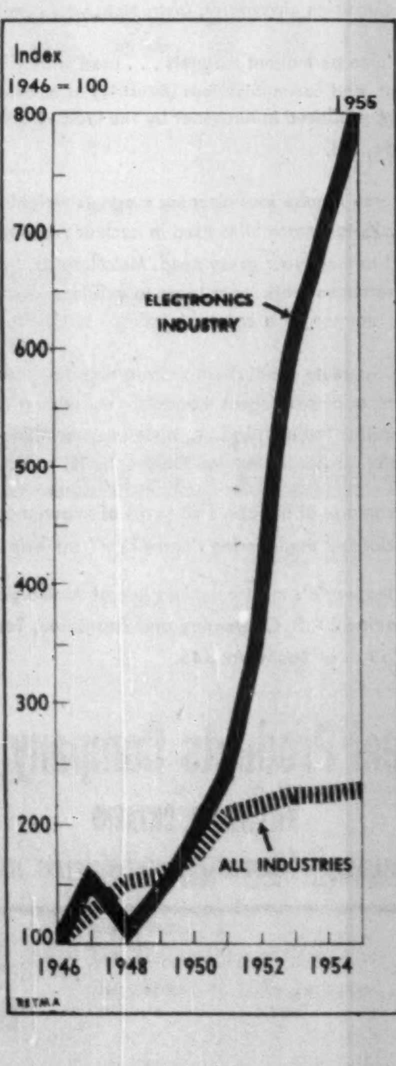
PSC Applied Research: 1951 sales, $250,000, 58 workers; 1955 sales, $2.5 million, 300 workers.

Pye Canada: Started 1949; sales multiplied 12 times; now 100 workers.

RCA Victor: Business increased 150% in five years.

Sparton of Canada: Sales increased three-fold in five years.

TMC Canada: Started in 1947 with one man; in 1956, 40 workers.



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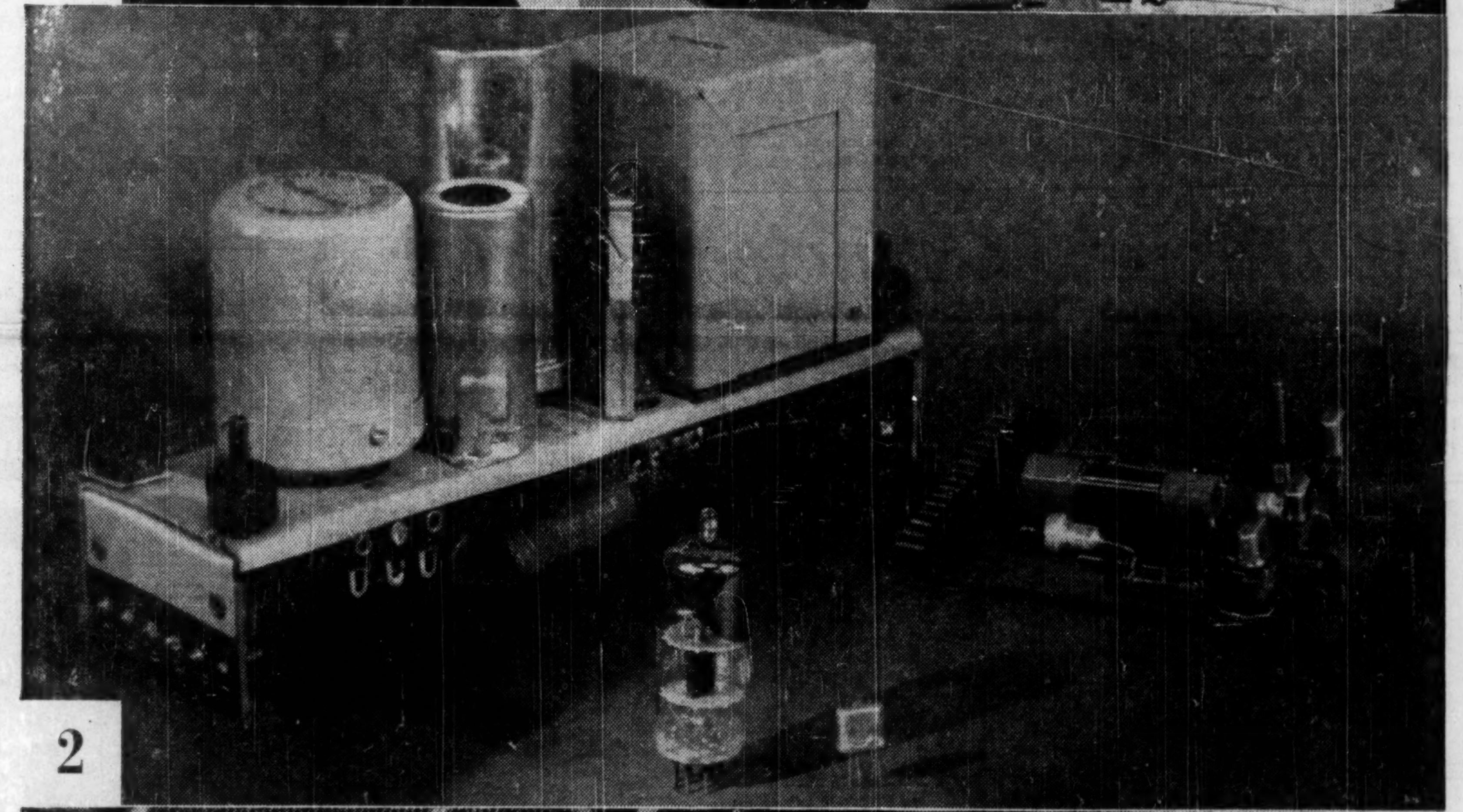

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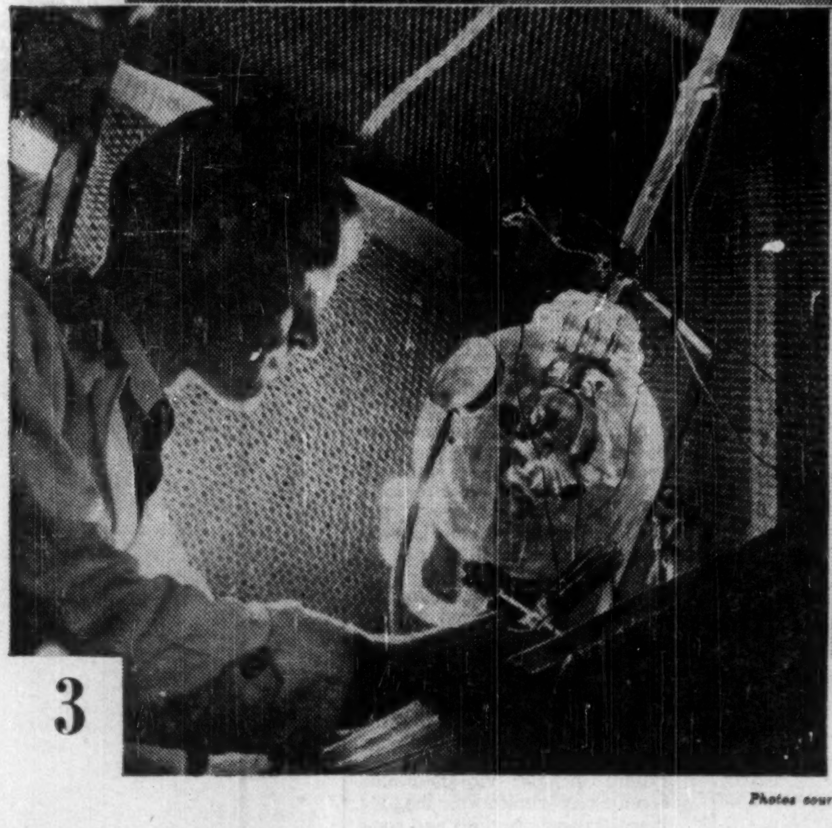

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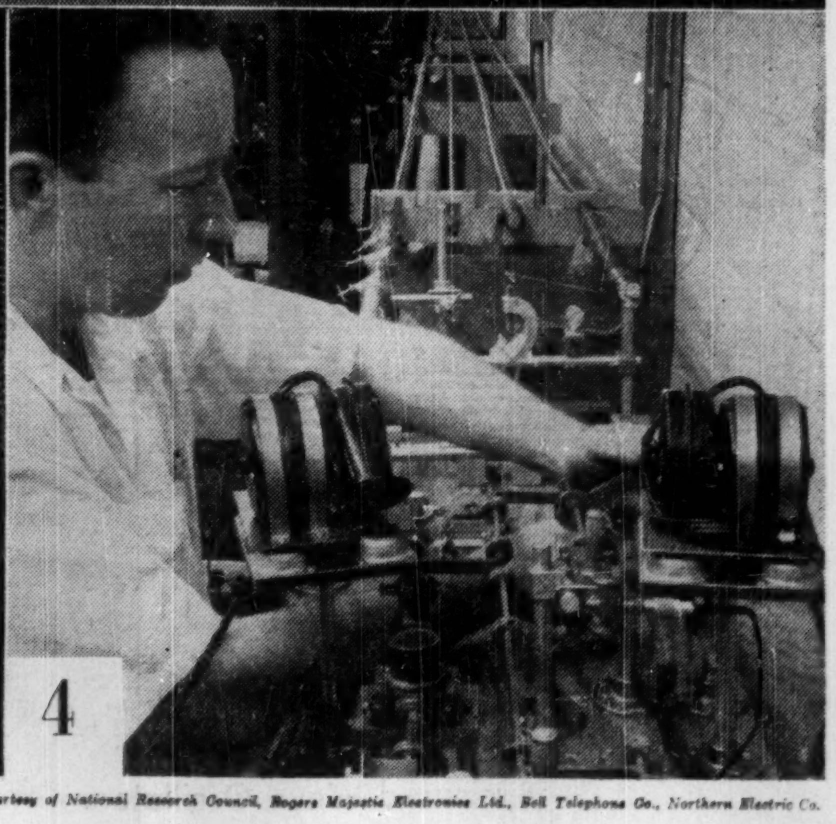

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Photos courtesy of National Research Council, Rogers Majestic Electronics Ltd., Bell Telephone Co., Northern Electric Co.

1 Dr. Hugh Le Caine of the National Research Council sits at the keyboard of a new electronic musical instrument, which brings new sounds, fidelity to music.

2 The tiny transistor is edging out the vacuum tube in electronics. One reason: Size. At left, a tube amplifier; at right, transistorized version. In foreground, a tube (left), a transistor (right).

3 A technician explores the phenomenon of secondary emission from metal surfaces. This experimental setup aids TV pickup, lengthens the life of tubes.

4 These long, hollow flexible tubes are wave guides. They promise a new and entirely different method of transmitting TV and conversations over distances, carrying thousands of messages at once.

From a Particle: Billions

(Continued from page 49)

than $75 million. The figure is increased to at least 50,000 people if all phases of the industry, distributors, dealers and servicemen are included.

And the future?

"The crystal ball isn't big enough," they say in the industry. But 80% of the business that is being done today is in products and services which did not exist commercially 10 years ago. In another 10 years, regardless of the size of the industry, a comparable percentage of the volume will be done in products that are not now on the market. This is the view of the industry's leaders in both Canada and the U. S.

On June 1, 1956, television sets sold in Canada totaled 2,175,234, according to Retma. In 1948, no television sets were being produced in Canada.

In the U. S. the electronics industry's present annual volume is estimated at $9 billion. It will be $20 billion by 1964, according to an appraisal by Sylvania Electric.

A good demonstration of the growth rate of the electronics industry is in the use of its products in aircraft. A report just issued by the Aircraft Industries Association of America states that the cost of electronics alone on three medium bombers today would buy a complete World War II bomber.

Today a medium bomber requires 40 miles of wiring compared with 10 miles for the World War II model. Modern bombers contain more than 1,500 electronic tubes. A World War II fighter required 515 wires totaling 1,545 ft. Now, jet fighters need 5,500 wires totaling nearly 23,000 ft. The modern all-weather fighter has almost $80,000 worth of radar and rocket firing control and navigation equipment which was not used at all on the planes of 10 years ago.

The story is the same in a hundred other fields. There is now hardly a phase of human endeavor that is not affected, directly or indirectly, by electronics.

Communications, transport, pure and applied research including nuclear physics, manufacturing of all types, medicine, music, speech recording and reproduction, sound reinforcement, entertainment, power development and distribution, air and marine navigation, computation are just some of the present applications of the wonder child.

But the story is not entirely without blemishes.

One frequently emphasized obstacle to progress in the industry is the shortage of engineers. It is inevitable that there should be some shortage felt in an industry that is growing so fast.

But this feeling is at present being aggravated because the growth is by fits and starts.

The industry's growth would be much steadier and more normal if it was generated only by the demands of the domestic and commercial market. But more and more it is being propelled in spasmodic bursts by government defense demands.

The team of engineers that is formed in response to the specific government contract of the day have nothing to keep it together when the contract has been completed. And lacking a motive to keep them loyal to a project, the engineers are tempted by exciting proposals to work in sunny California.

The cure for this, say many of the industry's leaders, is for Ottawa to place more contracts in Canada and be prepared to pay a high premium to do so. At present it is unofficially understood that the premium on keeping the contract in Canada cannot be much more than 15c.

With smaller production runs and less developed facilities the contract kept in Canada might cost the taxpayer $1.50 for every dollar that it now costs in the U. S.

"But the Canadian contract would keep the money in Canada and give tremendous impetus to the industry. It would pay off in terms of development and research for the future," argues the top man in one of Canada's biggest electronics divisions.

And he adds: "In the U. S. there is a surplus of some $25 million of electronics contracts that no company can be found to take."

The program of development and research in the industry in Canada is not regarded as nearly sufficient. Both the Canadian Manufacturers Association and Retma state that the attainment of greater self-sufficiency in scientific and industrial research is of such vital importance for the future of Canada that the government should provide many more incentives for industry to participate in research programs.

In its brief to the Gordon Commission, Retma states: "The present practice of adopting much of the results of U. S. and European research for Canadian use is not, as a long-term policy, good for Canada. Picking technical brains is a slavish form of copying which leads to mediocrity, although it may save money at first."

There is an increasing tendency for electronics firms to sell control to U. S. firms for the funds to permit expansion or for the right to use U. S. patents. It is widely felt that this can only be followed by the shutting down of existing Canadian research rather than risk duplicating the work of the parent firm.

A serious task now facing the industry is that of improving the reliability of electronic components. In the Department of National Defense there is a strong feeling that before one can achieve domination in either land, sea or air warfare there is a battle of reliability to be won.

As equipment becomes more complex, it becomes less trustworthy. That is the blunt truth. It's an inherent feature of fast-moving technical progress. "There's more to go wrong," as the layman puts it.

How reliable are the weapons of today compared with those of 1941? One tenth as reliable. That's the answer given by an engineer at the Department of National Defense.

At Canadian Westinghouse electronics division, Hamilton, a special department tests all incoming products before they are used in the company's equipment. It is out of the question to test by sampling. Everything is tested. And the rejection rate?—remembering that the products were presumably inspected before they left the original maker: About 10%.

Electronics are vitally important in nuclear power plants. Canada's first plant is now being designed by Canadian General Electric Co., Peterborough, Ont.

The cost of the electronic instrumentation in a one-reactor plant is about $85,000, according to estimates. In the U. S. annual expenditure in this field of the electronics industry is expected to run to $125 million by 1963.

One of the reasons for the high costs: Some units have to be triplicated because they are insufficiently reliable. In fact, during operation, an average is taken of the three units.

While these are some of the flaws in the Canadian picture they are very much in the shadow of the industry's achievements. Some of the most important developments have taken place in the field of communications.

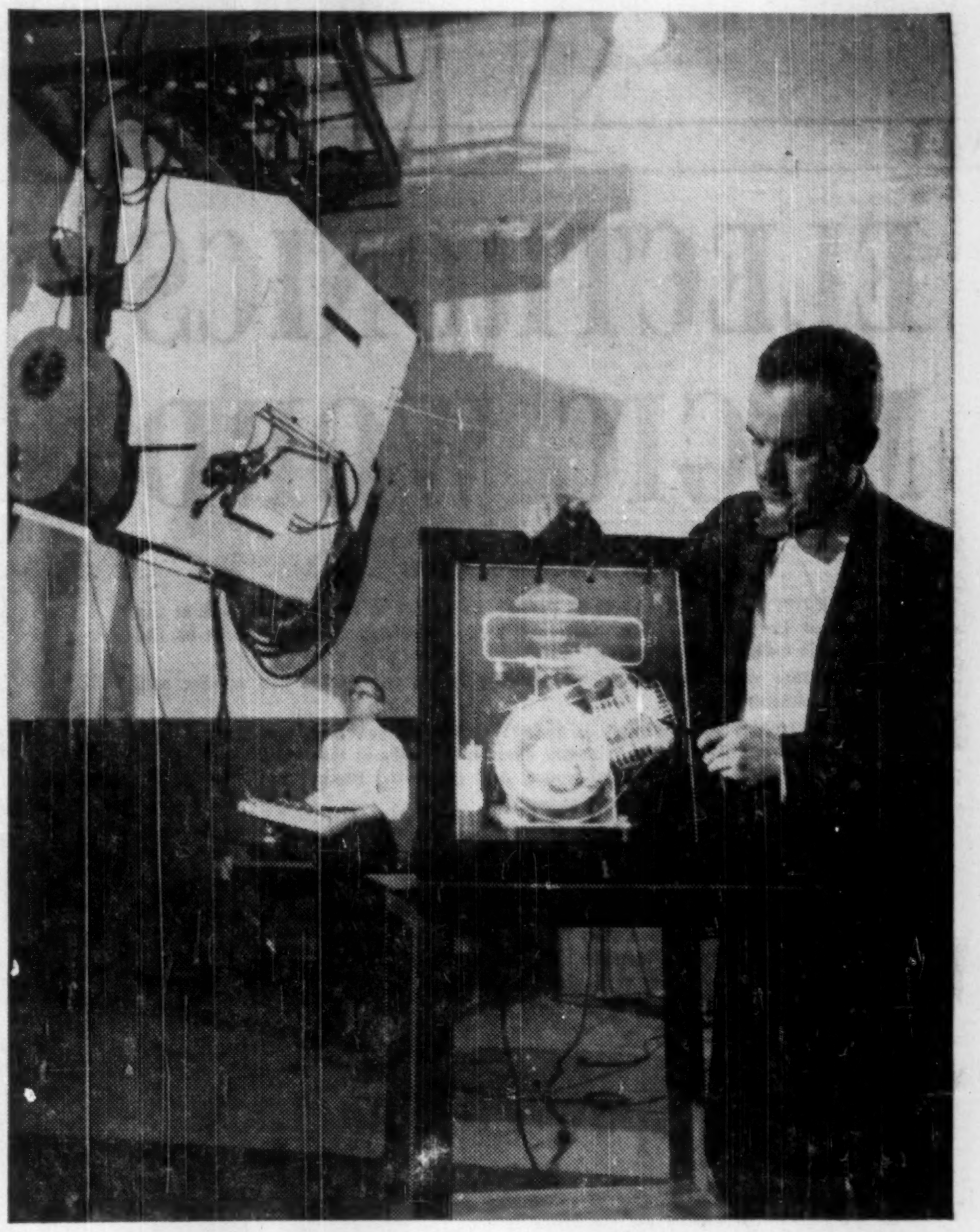
The great distances and the low population density in Canada have made communications particularly important. The striving for better channels of communications has been accentuated by the rapid development of uninhabited areas, the search for oil, minerals, hydro-electric power sources, the needs of defense preparations in the north.

There is another particularly Canadian difficulty which has served as an impetus. Canada is the only large inhabited country over which sweeps one of the world's two broad auroral zones in which ionospheric storms most frequently occur. These storms, lasting sometimes for several days, disrupt radio communications completely.

In meeting these challenges, Canadian scientists have set a pace respected throughout the world. This week, alone, sees:

- The formal opening of the $42-million trans-Atlantic telephone cable linking Oban, Scotland and Clarenville, Nfld. The coaxial cable, with a capacity 40 times as great as existing facilities, is a joint project by Canada, Britain and the U. S.
- The formal opening of a 1,200-mile stage in the 3,900-mile trans-Canada microwave system, due to be completed, coast to coast, in mid-1958. Canada will have the longest microwave system in the world.

Another field, electronic computation, is bringing new concepts of speed, accuracy and uniformity to engineering methods, business management, office procedures. Better and quicker evaluations, more economical designs, better scheduling of projects and equipment, improved accounting controls are a few of the dramatic benefits. What was a gleam in the eye of the scientist 10 years ago is now an immensely practical tool which the hands of modern civilization are beginning to grip.



Movie pictures can now be taken of the innards of an engine while it is still running.

The new technique, called stroboradiography, has been developed by General Electric. The process gives designers their first glimpse at the spinning, throbbing internal movements of the engine through its steel housing. Improved design and perhaps basic changes could result from the studies now possible.

New Electronic Equipment Will Revive Injured

Victims of drowning, gas axphyxiation and severe asthma will soon get artificial respiration from electronic equipment now being developed.

The method is to shoot tiny electrical pulses through a glass wand applied to the solar plexus. The tingling, but painless pulses travel along the nerves that control breathing.

Portable units, working from batteries, are planned for beaches. Other units could be carried in ambulances and police cars.

The electronic wand can move more air in and out of the lungs than manual methods of artificial respiration, claim the makers, **Batrow Laboratories**, Branford, Conn.

The wand is a glass electrode filled with argon under negative pressure. The intensity of current is increased until the diaphragm contracts rhythmically and takes over the mechanics of breathing.

Working from either auto batteries or household mains, the model now being made weighs 40 lb.

Electronics in Nuclear Power

Design of a nuclear power plant demands the integration of the most technical fields, says L. R. Haywood, control engineer, Civilian Atomic Power Department, Canadian General Electric Co. A graduate in engineering physics of the University of Saskatchewan, he was for seven years instrument and control engineer at Atomic Energy of Canada Ltd.

Here he discusses the part played by electronics.

By L. R. HAYWOOD

In the electronics industry today, great emphasis is being put on the development of more reliable and longer-lived components. This is of the greatest importance in nuclear power plants.

In the absence of components of the utmost reliability, designers are having to triplicate critical units. If the output of one of the three units in operation disagrees with the other two, it is automatically disconnected.

Transistors and magnetic amplifiers are being used in the drive to increase reliability and lengthen unit life.

Dollar figures show what this means. Electronics for a nuclear power plant involving one reactor have been estimated at $85,000. A report of the Atomic Industrial Forum indicates that a maximum reactor program in the U. S. may mean an annual expenditure by 1963 for reactor instrumentation of $125 million.

Many of the electronic devices in nuclear power plants are special designs. Others, like television, are well known devices having special applications.

What use is TV in a nuclear power plant? It's used for examining places inaccessible to man. It's used for supervising the relays of men needed in places often made inaccessible for long periods by radiation.

Among special devices are ion chambers. They are used in concontrolling the reactor part of the plant and for protecting personnel from harmful radiation. Ion chambers for personnel protection are distributed throughout the working area of a nuclear power plant. Some miniature ion chambers are even carried on the body.

Whenever a chamber shows a harmful level of radiation, the amplifier to which it is connected rings an alarm.

Vital Control

When used for control, the ion chambers are mounted close to the reactor and measure neutron radiation. As this is nearly proportional to the power being produced in the reactor, it is a method of indicating the reactor's power.

A major difficulty in nuclear power plant control is the very great range of power through which the reactor must be controlled. Conditions are not safe even when the reactor is producing only one millionth of its rated power.

It is capable of changing so fast that control, even at the lowest level, has to be maintained by instruments. This is done with an electronic circuit capable of indicating, on a single scale, reactor powers differing by a factor of one million.

Other electronic equipment needed includes vibration and eccentricity monitors for the turbine, gas analysers, pH and conductivity meters and contamination monitors. The latter are used primarily to prevent the spread of radioactivity by personnel from areas where it exists as a normal condition, to areas which are to be kept clean.

The detector for these units is generally a geiger tube or tubes in various arrangements, depending on whether shoes, clothing, tools, hands, or laundry are to be monitored. The electronic circuit following the geiger differs considerably from that used with ion chambers.

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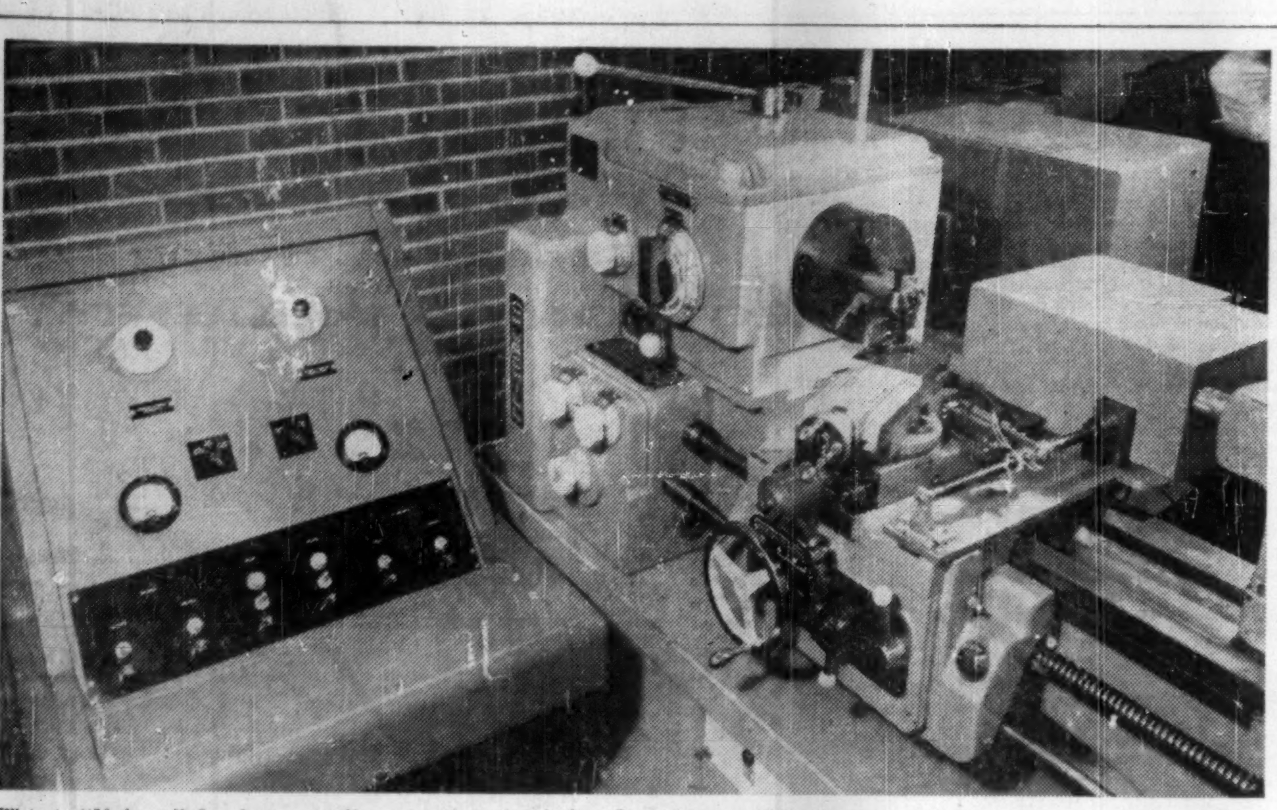
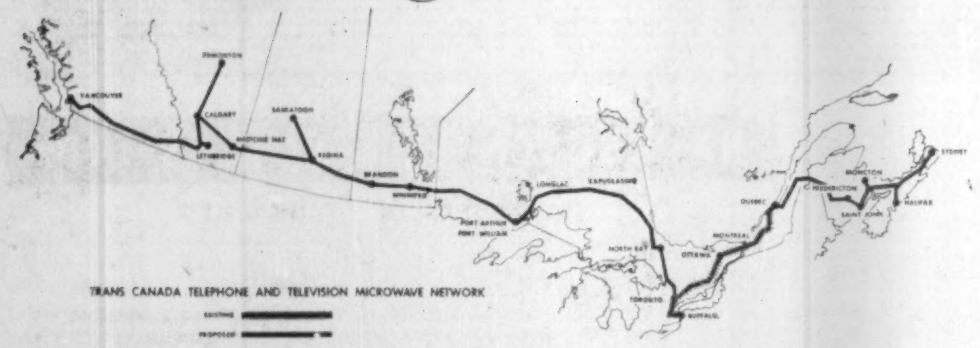


This is "Nultrax" fitted to an ordinary engineering lathe. It makes possible the automatic measurement of the position of the cutting tool to an accuracy of 0.0001 in. over a distance of 10 ft.

Invented by Canadian Westinghouse engineer, 34-year- old Franz Brouwer, it can be applied to milling machines, boring mills, jig borers and any special machine in which the cutting tool must be positioned with great accuracy.

It's unique in Canada.

Microwave Towers Step West, Soon Longest Link in World



Another step is being taken this week-end in the project that will give Canada the longest microwave network in the world. When the Trans-Canada Telephone System's link between Toronto and Winnipeg starts Sept. 30, the project will be 1,200 miles nearer completion.

North Bay, Sudbury, Port Arthur and Winnipeg will see live CBC television programs for the first time this week end when the microwave link is opened. Scores of new long-distance telephone circuits will go into operation.

Step by step the microwave system is stretching across Canada from Sydney, N.S. to Victoria, B.C. Its 3,900 mile route is marked by 139 radio relay stations and 20,000 vacuum tubes.

Completion in 1958 will bring nation-wide television, direct long-distance telephone dialing, first by operators and then by the public, and greatly improved facilities for teletype, telephoto, telegraph and telemetering.

When the coast-to-coast network opens, it will have two channels in each direction. The ultimate capacity of the system will be 12 one-way channels. A pair of channels can carry 600 telephone conversations or two television programs.

How will it all work? Microwaves are super-high-frequency radio waves with many of the characteristics of light. Like light, they travel essentially in straight lines.

The microwave beams, only two degrees wide, are focused by antennas from tower to tower across Canada. Because the range of transmission is limited to line-of-sight paths, the relay towers are placed about 30 miles apart. They are between 50 and 350 feet tall to clear obstacles in the path of the beam.

Each relay tower costs about $300,000 to build and equip. But the antennas are so efficient that less than one watt of power is needed to span the distance between the stations.

Towers Are Zig-Zagged

No three towers are placed in a straight line in the network. They are zig-zagged to cut out interference from scattered signals that might otherwise reach from the first tower to the third.

An intricate alarm system, depending on remote control, will be used to warn off any trouble that might develop. Groups of 12 automatic and unattended stations are linked by telephone lines to alarm centres spaced along the network.

Each station has been assigned a musical tone of specific frequency. The moment trouble starts, the tone is interrupted, tripping off a warning signal.

Alarm signals will also warn if outside power fails and the automatic emergency power plant fails to take over.

The first Canadian microwave network carrying both television and telephone calls was established by the **Bell Telephone Co.** in May, 1953, between Toronto, Ottawa and Montreal. It was supplemented by a 70-mile extension to Buffalo to connect with U. S. television networks and in 1954, a 180-mile link to Quebec City started.

Work on the Toronto-Winnipeg link began in May, 1954. Next link to start will be Saint John - Moncton - Halifax - Sydney in December this year. The Winnipeg-Regina section starts in March, 1957, Regina-Saskatoon in May, 1957, Regina-Calgary and Edmonton-Calgary-Lethbridge in September 1957.

Final links will be Quebec City-Saint John and Hardwood Hill, N.S.,-Churchill, P.E.I. sections in Dec. 1957 and the Calgary - Vancouver - Victoria section by mid-1958.

Sky-Scraper Tram Helps Build Link

A $250,000 aerial tramway was needed to conquer a brutish British Columbia mountain during the building of one of the transCanada microwave relay towers.

B.C.'s relay route starts at 6,965 ft. Morrissey Ridge, at Fernie, and leap-frogs from mountain to mountain to a 150-ft. tower on a building in Vancouver.

Engineers of the **North-west Telephone Co.,** the company engineering the B. C. section, consider Dog Mountain, near Hope, B.C., the toughest of the 13 sites where the towers are to be built.

Rising 4,916 ft. over the Fraser River, access to the top by road proved impossible. The aerial tramway was considered the only method of reaching the summit with material and manpower for the relay station.

The tramway that has now been built covers a greater distance upwards than any on the continent. The cable for the three-passenger car is 11,800 ft. long. The tractions cable is 22,000 ft. long. Both are single lengths made in Vancouver.

Constant tension on the supporting cable is maintained by two concrete weights. The one at the summit weighs 12½ tons and the one at the base, 34 tons.

An electronic eye will guide vehicles following storm-swept trails in the Arctic.

Tests of this trail-marking equipment have been carried out successfully by the U. S. Army Research and Development laboratories.

Two wires, buried in the snow, carry electric current. Receiving equipment in the vehicle picks up signals from the wires.

An electronic trail of this kind is now being laid out over a 100-mile route on the Greenland Ice Cap.

Snowstorms and ice fogs, chief dangers in Arctic travel because they hide dangerous ground, will thus be conquered.

Electronic scanning equipment which can automatically transmute color transparencies into four separate negatives, one for each color, has been developed for use in printing.

The equipment, based on electronic computation techniques, speeds the process of making engravings or lithographic plates for four-color printing.

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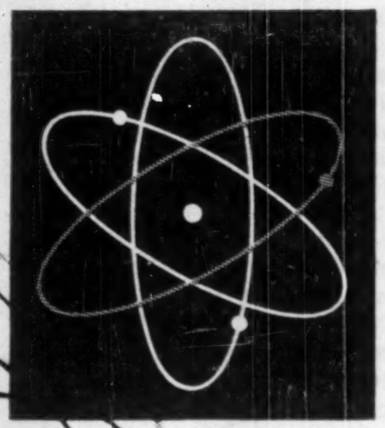

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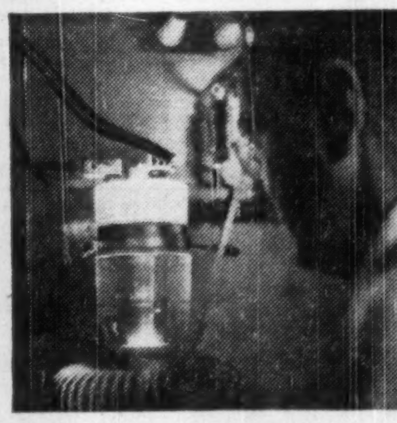

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From the Labs: A New Music

New musical sounds and new instruments for making them are emerging from the electronics labs. Why should we confine our musical pleasures to sounds produced from ancient mechanical monstrosities?

So far new instruments have been mainly the creations of sensation-seekers and scientific gadgeteers with mainly dubious results for musical sophisticates.

This article is important because its author is a scientist and a highly-trained musician so what he has to say makes aesthetic as well as scientific sense.

DR. HUGH LE CAINE of the National Research Council, nuclear physicist, researcher, inventor, musician.

By DR. HUGH LE CAINE,
Physicist, Radio and Electrical Engineering Division
National Research Council

It is encouraging to see technical knowledge gained during the war being applied in non-military fields. Music is one of these. One of the bits of information which reached us from Russia last year is that she is developing a new electronic musical instrument.

France has recently developed a new technique for putting a musical composition together by means of a tape recorder. Germany is engaged in electronic music research of the highest calibre. In Canada, electronic instruments are being developed at the National Research Council, Ottawa.

The serious study of electronic music began with the application to music of the electronic devices developed during the 1914-18 war. The challenge presented by this new scientific art was eagerly taken up in the tempestuous and fascinating era that followed the war—the era which, seen in retrospect, was affectionately named "The Roaring Twenties."

Compositions such as "Pacific 231" and "The Building of the Dnieper-Petrovsk Dam" were evidence that composers were anxious to experiment. High-ranking artists such as Milhaud were quite willing to write music which exploited the new electronic effects.

In this benevolent atmosphere literally dozens of electronic musical instruments appeared. A well-known conductor, speaking in 1929, predicted that within a few years electronic techniques of tone production would entirely replace the well-known ones.

Of the electronic instruments of the "Twenties," only the theremin is now known to the average listener as the source of the weird effects on the soundtrack of "The Lost Weekend" and some of the Hitchcock psychological thrillers.

Far from having replaced the older methods of tone production, electronic techniques are not even represented in the modern symphony orchestra or small musical ensembles.

New Effects

In the 25 years or so which have elapsed since the early experiments in electronic music, the science of electronics has, however, made tremendous progress. The modern miniature tube is a miracle of compactness and efficiency compared with its counterpart of the "Twenties." Until quite late in that period, tubes were battery-operated. The transistor promises even more striking improvements in size and efficiency in the future.

A very large number of new military and industrial applications of electronics were made during and since World War II. There are now many more electronic circuits available for the production of musical sounds by electronic devices than there were in the "Twenties."

Electronics has, in fact, reached the stage where new circuits are invented rather to fill out a pattern than to meet a concrete need. The central problem in electronic music is thus that of putting the requirements of the musician or performer into objective terms, rather than inventing new circuits.

Today our objectives are, broadly speaking, the same as those of the experimenters on electronic music in the "Twenties." We hope that the superior flexibility which electronic techniques have, compared with mechanical or acoustic techniques, may result in removal of some of the technical difficulties of playing musical instruments, and may place new musical effects at the disposal of the musician.

Control Of Pitch

Adequate control of the pitch of the sound seems to be the most important requirement for an effective monophonic or one-note-at-a-time instrument. The use of the type of keyboard found on an organ for controlling pitch has many advantages.

It is especially suitable for the execution of rapid passages such as scales and arpeggios. The pitch control provided by the conventional keyboard must, however, be extended in several ways to make a solo instrument which is useful in our present musical system.

The loudness of the sound must similarly be under the intimate control of the player; he must be able to produce not only gradual crescendi and diminuendi, but he must be able to control the attack and decay of the sound as well.

The most logical place to apply this control seems to be on the key itself, so that the motion which selects the key also controls the attack, the loudness of the sustained portion of the note, and the decay.

The flexibility of electronic methods of tone production shows up strikingly in the ease with which the timbre of an electronic instrument may be changed. To get the best musical effect, the rather bewildering array of timbres must be organized in such a way that the musician can best comprehend them. He must be able to control them easily, quickly and continuously.

Thus, neither stop-switches, nor separate controls for each harmonic are satisfactory. Although the range over which the well-known musical instruments can change their timbres is not large, continuous changes of timbre made frequently, play a significant part in delivering the musical message.

This may be appreciated by listening to a monophonic part played on an electronic instrument in which the only changes of timbre are made infrequently—that is, several bars apart—by operating stop-switches.

Before the advent of electronic music it was never doubted that absolute purity of tone was an ideal to be striven for. A musical sound was defined as a periodic one. Absolute purity of tone to the accuracy to which the ear is capable of judging is not attainable on the violin, for example, where each cycle is slightly affected by the mechanical condition of that part of the bow which is passing the string at the time.

The embarrassment of perfection which electronic techniques of tone generation possess, makes it necessary to question whether a substantially perfect periodicity is in fact desirable — at least all the time. Should not the performer be able to introduce, at his discretion, certain departures from classical periodicity such as frequency and amplitude modulation by low-frequency and noise voltages?

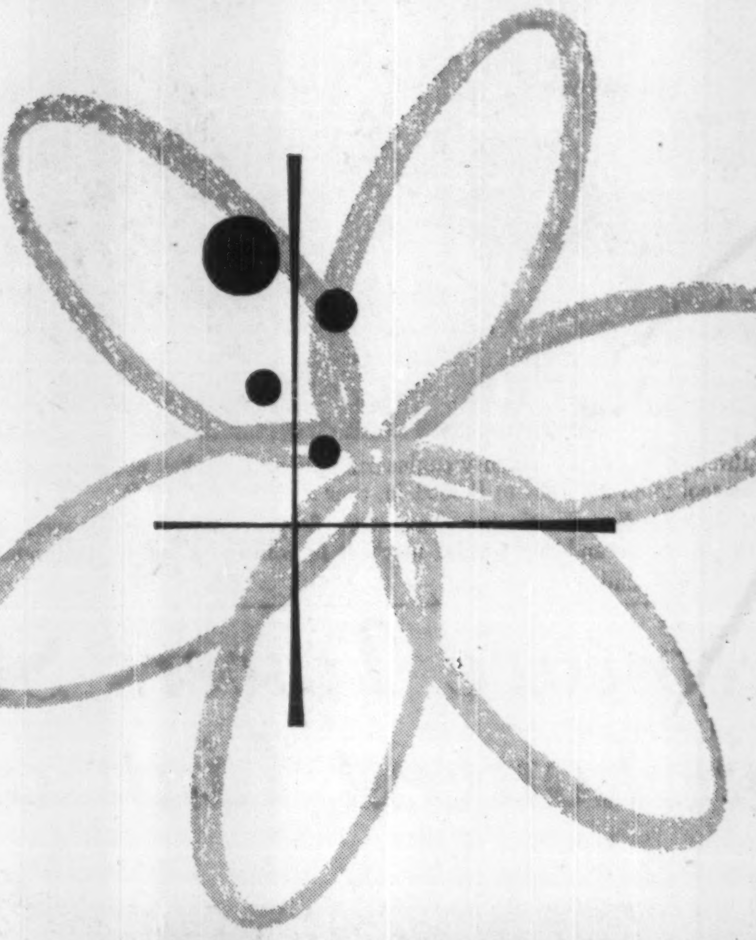
Hard To Play Well

Although, on account of the extreme flexibility of electronic techniques, it would have been expected that music produced on electronic musical instruments would be more expressive than music produced by the more limited mechanical techniques of the conventional musical instruments, the term "electronic music" has come to be associated with a mechanical or expressionless sound.

The reason for this seems to lie in the fact that in designing electronic instruments there is a much greater temptation to take

(Continued on page 54)

in step with
the progress of
Canada's growing
ELECTRONICS INDUSTRY



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Navy Antennae Get Salt Water Tests on Dry Land Ship Model

By DR. J. Y. WONG
National Research Council

Ships of the Royal Canadian Navy will soon benefit from a recent and important development at the National Research Council laboratories in Ottawa.

Work is being done to improve the performance of shipboard antennae, vital in maintaining radio communication. This is being done for the first time in Canada with models of ships.

The problem is to prevent the directional characteristics of the antenna being influenced by such factors as the ship's superstructure, adjacent antennae and even the ship itself, by casting shadows or giving spurious reflections.

Present theory suggests that valid results may be obtained from models if ship size and operating wavelength are scaled to the same value.

Model studies are especially advantageous for a number of reasons. Use of models provides a considerable reduction in both the cost and time involved in making the necessary measurements on shipboard antennae. Secondly, the studies are not restricted to those ships presently in operation.

The scope of the program can be extended to include ships in preliminary design or building stages so that alterations in structure to allow a more satisfactory antenna system can be incorporated more easily and inexpensively.

A program is currently under way to test and measure the antenna system on Canada's new light fleet carrier, HMCS Bonaventure, which is to be commissioned this fall. A scale replica of the ship was constructed in the laboratory's model shop. The model is made of wood and sprayed with metallic copper in order to provide the necessary electrical conductivity

The ocean is simulated by a large, unobstructed, highly conducting ground plane. The model ship under test is placed on a circular turntable. Surrounding it is a rectangular asphalt field 200 ft. long and 70 ft. wide which is covered with a thin layer of metallic aluminum.

THIS SCALE MODEL of the Royal Canadian Navy's new carrier, HMCS Bonaventure, landlocked on a test range, is used to determine the directivity pattern of the ship's communications antennae. It saves time and costs of actual tests at sea.

Investigations carried out on the model ocean represent a gigantic stride forward to provide more reliable long-distance communications for Canadian vessels.

DR. JAMES Y. WONG, electrical engineer, National Research Council.

Write Your Own Music With This New Machine

First working model of Osmond "Ken" Kendall's composer-tron will be ready next fall.

It's being made at **Components Corp.** of Denville, New Jersey. Cost will be about $40,000.

Completion will mean an opportunity for a company to go into the electronics field, begin production of composer-trons for commercial and home use.

Inventor Kendall thinks the company should be Canadian, million-dollar in size or larger, not already in the electronics industry. He isn't hopeful about getting Canadian backing because less cautious American risk capital has jumped in first.

The instrument is designed to make it possible for anyone to compose music and hear it played on the same machine. The sounds can be similar to piano, trumpet, flute or any other known instrument, or combinations of any instrument—which produce music no orchestra can reproduce.

(A sample Kendall recording sounds half electric guitar, half organ, with a sprinkling of chimes and a symphonic background.)

Kendall built much of it while working for the National Film Board and that's why the Board has 50% Canadian rights. Kendall can dispose of foreign rights any way he wishes.

The composer-tron is the result of Kendall's discovery that the human mind can recognize music from only 1% of the sound wave produced by a musician. This sound wave, which is a frequency, has an over-all shape, and the shape "lights up" some of 4,000 nerve fibres in the inner ear.

All that's needed is to reproduce the over-all shape, not the hundreds of lines of the frequency.

Kendall discovered this over-all shape can be represented by one line. His machine turns the one line into sound.

Here's how the machine — which looks like radio and TV equipment roughly in the shape of a roll-top desk—operates:

1. A button's pushed to make an oscillator produce a pitch. This is fed into the machine.
2. Harmonics are added with a harmonics generator.
3. The resultant sound wave shows up on a TV screen.
4. The composer draws the shape of the wave on the TV screen's glass.
5. The shape is photographed by an electric eye.
6. The composer-tron plays back the shape.
7. If the note played back is the right one, the shape is noted on a stretch of film, at places where it's wanted. If the note produced isn't quite right, the process is repeated.

This way of composing music takes about four times as long as normal composing — notes on music paper. But it's shorter than what's involved in normal composing, arranging, playing and recording by composer, arranger, orchestra and sound studio.

And the price is less. It's a do-it-yourself way of making your own records, from boogie to Bach.

Kendall estimates the home composer-trons will sell for about $1,200, and that larger models (the way a church organ is larger than a home organ) for commercial radio and television use will cost from $25,000 up.

There's also a composer-tron which produces speech. It can take a voice sample, allow a "composer" to produce a whole speech in the same voice.

The inventor doesn't see any use for it which would make you want to buy one. And so he's not unhappy that it's at the new National Film Board headquarters in Montreal, disassembled, waiting for more research to be done on it.

A composer-tron society is being formed. Members are persons with an interest in the production of music by electronic methods who hope to have an opportunity to compose on the model due next fall.

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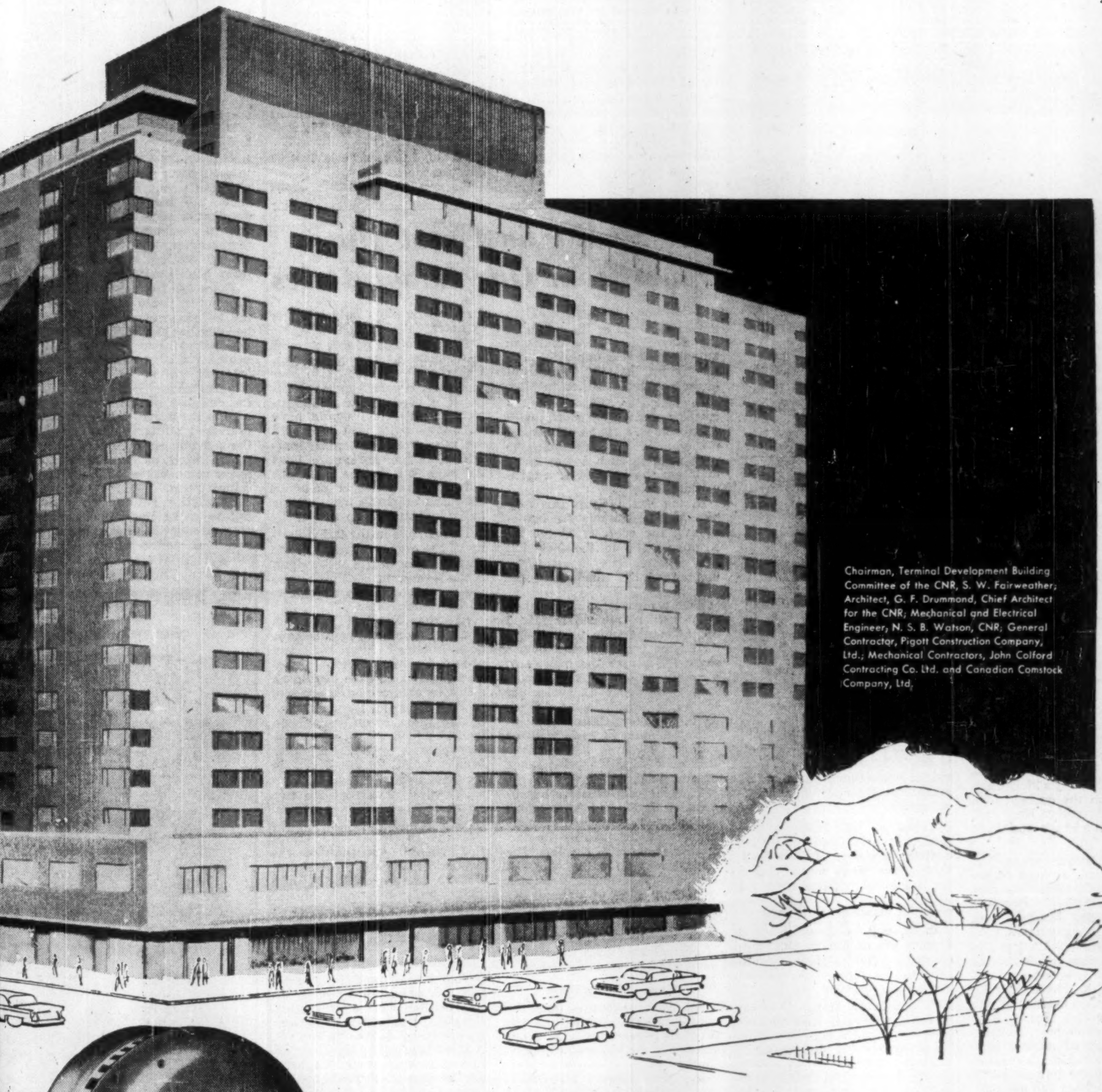
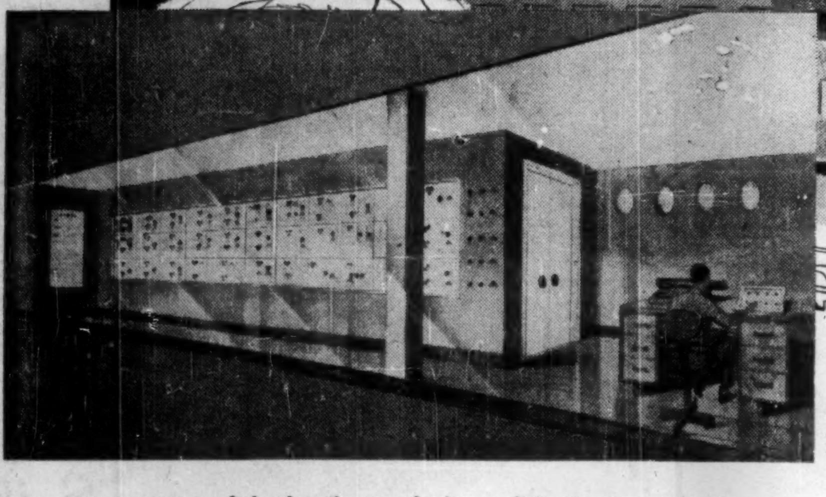


Chairman, Terminal Development Building Committee of the CNR, S. W. Fairweather; Architect, G. F. Drummond, Chief Architect for the CNR; Mechanical and Electrical Engineer, N. S. B. Watson, CNR; General Contractor, Pigott Construction Company, Ltd.; Mechanical Contractors, John Colford Contracting Co. Ltd. and Canadian Comstock Company, Ltd.



Nerve centre of the heating and air conditioning system is this Supervisory DataCentre from which one man will control or check 200 operating points in 7 equipment rooms located at various levels throughout the hotel. Patterned after the giant control centres in modern chemical and refining plants, the Honeywell electronic system in the new Queen Elizabeth Hotel applies the principles of automation to human comfort and efficiency. Linked to the DataCentre will be thirty-five electronic thermostats that automatically adjust for the varying heating and cooling needs of the hotel—compensating for temperature changes that occur when banquet halls and other public rooms become crowded with people. Unique feature of the master control panel is an electronic scanning monitor that will automatically check temperatures throughout the building and type out reports to the engineer at the DataCentre.

Honeywell Electronic heating and air conditioning control can be custom-engineered to provide the same comfort in many types of buildings, old or new. For complete information, write Honeywell: Dept. FP-CTC-8, Leaside, Toronto 17.

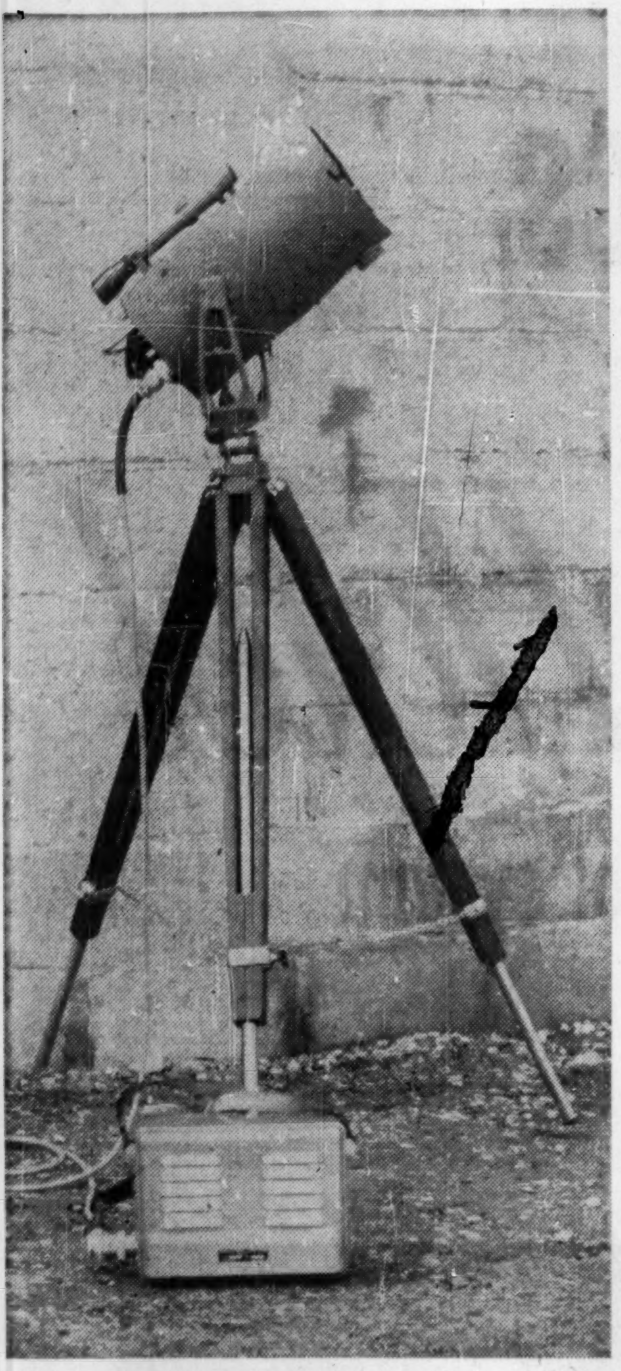
As a guest, you'll enjoy luxurious comfort and convenience; as a businessman, you'll appreciate the exceptional efficiency of Electronic Control. Rising to a height of 21 stories, the new 1200-room Queen Elizabeth Hotel will dominate the site of the CNR's magnificent Terminal Development Program in Montreal. As the newest hotel in the British Commonwealth and the first hotel in the world with centralized electronic heating and air conditioning control, the Queen Elizabeth will provide new luxuries in comfort and convenience. Guests will find temperatures uniformly correct throughout the hotel—ventilation and humidity carefully maintained at the right level for comfort. And all this superb comfort is controlled with push-button ease by one man at the Honeywell Supervisory DataCentre, proudly displayed in a glass-enclosed room along one of the main corridors.

But that's only part of the story. Consider the savings. In manpower alone, the Queen Elizabeth will save more than $23,800 a year as a result of the Honeywell Centralized Electronic system. Thousands more in fuel and power savings will result from the greater sensitivity, faster response and improved overall efficiency of the system. Total operating savings, after carrying charges, will yield approximately a 27% return on investment.

There's another factor, too. Guest satisfaction. No one can say for sure how much guest comfort is worth to a hotel. But everyone knows it's the main reason guests return to the same hotel year after year. Once you've stopped at the Queen Elizabeth, you'll know how important such comfort can be.

Guests will dial their own room temperature
More than 1200 Honeywell Pneumatic Round Thermostats—one in every guest room or suite of the new Queen Elizabeth Hotel will supplement the master electronic heating and air conditioning control system, permitting automatic guest room temperature control winter and summer. Designed to harmonize beautifully with modern interiors . . . engineered to do a modern temperature control job, the Honeywell Pneumatic Round provides sure, sensitive response, and accurate control of heating and cooling . . . all automatically.

Honeywell ELECTRONIC CONTROLS LEASIDE, TORONTO 17



The presence of a person at 30 ft. or a cigarette at 100 ft. can be detected by this infra-red pyrometer made by Sinclair Radio Laboratories, Toronto.

Its commercial use? To detect flaws in high voltage power lines or smoke stacks that are overheating. It is sensitive also to cold, can detect a piece of ice at a distance.

It's unique in Canada.

Will War Electronics Fail Us in a Crisis?

When our forbears fought with swords there was a chance that the swords would break.

How reliable are the electronic weapons with which we guard Canada today? Who's to blame if they fail?

There's a startling answer given in this assessment by M. L. Card, deputy director of the Canadian Military Electronics Standards Agency, Department of National Defense.

By M. L. CARD

The most important factor that the Department of National Defense wants to emphasize at the IRE convention is the need for co-operation between industry and government to raise the reliability of electronic systems.

They must reach a level where military commanders can continue to depend on the increasingly complex equipment for vital detection and control functions.

Despite the increasing reliability of individual parts, military requirements for equipment of greater scope and precision have resulted in complex systems whose predicted reliability is only about one tenth that of the simpler equipment of 15 years ago.

M. L. CARD, deputy director, Canadian Military Electronics Standards Agency, Department of National Defense.

Many of us concerned with the employment of electronics in defense systems feel strongly that the key to sea, air and land warfare may well lie in first winning the war of electronics.

The immediate problem facing Canadian industry as well as defense authorities is largely the lack of enough management co-ordination in each step of design, procurement, production, inspection, use and maintenance of electronic elements in our weapons.

We are all optimistic about our scientific ability to design electronic defense systems of incredible effectiveness. But to translate such designs into trustworthy weapons is a most difficult feat that engineering skill alone will not accomplish.

To meet our future needs for increasingly reliable electronic equipment, we must rely heavily on the co-operation and wisdom of industrial management to develop a disciplined approach to the design and production of electronic weapons.

This discipline will demand proof of the inherent reliability of any design by vigorous laboratory and controlled field evaluation before major production is allowed to proceed.

A Mass Of Reports

A real problem on the operations side is that before the operator can demand reliable equipment designs from his technical service design authority, he must in all fairness define quantitively what reliability he expects in a given weapon system.

He must provide the yardstick by which the technical designer can measure his design requirements against the state of the electronics art. Many of the ingredients for that yardstick are still to be mined out of the mass of unreduced field and laboratory test reports.

To design a small, efficient, but complex system of adequate reliability, the designer is forced to seek parts far above present acceptable commercial performance. He has to provide redundant or standby components, and to consider every trick of temperature and voltage derating, cooling and protection from hostile environments.

There are frequent and sometimes justifiable charges that the influence of production and logistics has caused standardization programs to lag technically behind available new and superior components.

Nevertheless it is true that the designer must devote every care to the proper application of preferred military parts and to the weeding out of special items whose high performances can never compensate for their high failure rates.

Reliability suffers when we fail to make maximum use of mass-produced standard military quality parts in weapon design. This design must be complete before the designer can claim that his work is finished: it is folly to continue basic design changes as production develops.

When the completed technical service design requirement is passed to the procurement authority in the Department of Defense Production, one of the many contractual problems results from the fact that it may be initially cheaper to produce a questionable part than to make one of proven reliability.

No Discipline

When the successful industrial contractor at last attacks the practical problem of producing hardware of defined reliability, if he is new to the military field he uncovers a new problem to add to all his others.

Assume that he's a domestic radio manufacturer, relying on traditional management practices. These depend on vigorous demands from the field sales and service staff for immediate action to correct the weaknesses of equipment already marketed.

He knows that he makes his commercial product reliable because all the causes of failure are understood or quickly revealed by direct feedback of information from the field.

In complex military systems such feedback, if it exists, is usually weak and failure causes often unknown. The nature of military operations simply does not provide either a technically adequate description of the failure cause or the certainty of economic penalty for uncorrected failures.

Lacking this traditional discipline, industrial management must turn to such alternatives as laboratory testing and precise statistical quality control.

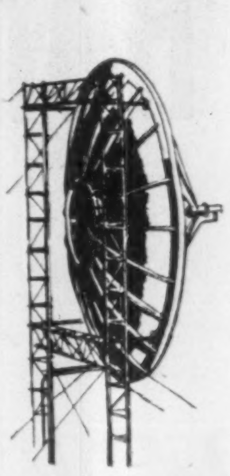
Until we have completely adequate field failure reporting we must initiate corrective feedback by engineering analysis of components failing under simulated conditions in the laboratory, or controlled field trials, in co-operation with both the technical design authority and the operational user.

In shaping these thoughts I am indebted to suggestions from colleagues in the Department of National Defense and particularly to papers by C. I. Soucy and L. W. Ball.

Here is the most economical way to influence

Canada's entire

Electronic and Communications Market



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Toronto-Built 'Audiometer' Most Precise Hearing Test

Not so long ago the instrument for testing hearing ability was the watch. If you couldn't hear it tick when the doctor held it to your ear, you were pretty deaf.

That doesn't sound very scientific, and it wasn't. "There was a great need for a precision method of assessing hearing acuity." This was the view of W. E. Hodges, who graduated in electrical engineering at the University of Toronto in 1943.

Two years later he was working in the university's McLennan Laboratory on the concept of a precision audiometer. He is still working on it and it's no longer a concept.

In consultation with Dr. Joseph Sullivan, director of the Adult Rehabilitation Hearing Clinic at St. Michael's Hospital, Toronto, Hodges designed and built a $40,000 instrument considered to be unequalled in the world. It is now in use in the hospital. The measurements of hearing that it makes possible are direct aids to diagnosing the source of ear disorders.

Hodges' audiometer controls the production of noise in minutely measurable quantities. The range of the human ear is from zero to about 140 decibels. This is equivalent to the magnification of a noise ten million times.

"It is a very wide range indeed. If we could hear a few decibels more at either end of the scale life would be very noisy. One decibel more would allow us to hear the noise of molecular disturbance that is normally present in the air," explains Hodges.

At the other end of the scale, an increase beyond 140 decibels is detrimental to hearing. Consistent subjection to noise of this magnitude damages the ear permanently.

Noises of this intensity are often unavoidable in certain industrial processes. In the U. S. there have been many claims for industrial compensation for partial deafness resulting from common manufacturing jobs.

In all such claims audiometric reports are of the greatest significance. The instrument could become an important weapon for organized labor.

While Hodges' precision audiometer appears to need no further development for some time, he is at present developing a different type based on a new theory in which the functions of the ear are expressed in the language of electricity.

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Here is your opportunity to broaden your knowledge of electronics; to work with a group specializing in challenging electronic design and development.

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• AIRBORNE RADAR
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Mechanical Engineers are urgently required too, preferably with shop experience in the electronic industry, including engineering design in sheet metal work, small gear mechanisms or heat dissipation problems.

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New Sounds in Great Music Come From Our Laboratories

(Continued from page 52)

the control out of the hands of the player and give it to an automatic device, under the mistaken idea that the instrument is thereby made easier to play.

In fact, the instrument becomes easier to play poorly, with an inadequate range of musical devices; but much harder to play well, in such a way as to maintain the interest of a critical audience.

In the last analysis this may be considered a mistake in designing the controls of the instrument, due to the fact that the designer has inadequately understood the function of the machine.

Such a mistake is made when a mechanical vibrato is placed on a monophonic instrument. While the use of such a device saves the player the trouble of a bodily motion at the vibrato frequency, about six cycles per second, it also makes it difficult or impossible to attain the required amount of variety in the vibrato. It gives the music a feeling of being limited in range of expression.

Thus a good musical instrument is simply one with which the required standard of performance is attained by the performer as easily as possible. The critical musical public will not accept an instrument because it is easy to play at some lower standard; nor, of course, an instrument which is more difficult to play at the required standard of performance than the instrument they are accustomed to.

What is Being Done

An instrument based upon the considerations outlined in the previous paragraphs is being developed at the National Research Council.

In the larger instrument groups much man-power could be saved by redesigning the instruments to provide louder sounds, choir effect, or greater range of timbre. But the limitations which prevent a single performer from performing a quartet or a symphony are essentially due to the performer, rather than to the limitations of present-day instruments.

This means that the amount of information which has to be handled per second during the playing of concerted music is too much for one man. If this is true, the monophonic (one-tune-at-a-time) instrument is the all-important musical instrument, and the starting point of musical thinking.

In the design of such an instrument the designer abandons the idea of producing harmony and arranges the controls so that a performer can make a single musical part or melody line as effective as possible.

Nevertheless there will always be a demand for an instrument so designed that the best possible musical effect may be achieved by one man playing alone. Our musical system demands that harmony should be provided.

An essential design requirement is, therefore, that the organ-type of instrument must be capable of carrying a sufficient number of musical parts at one time so that harmony may be clearly established. It is desirable that the player should be able to get effects similar to those obtained on a monophonic instrument, but since he must supply harmony as well, it is not expected that he should be able to compete with a performer who plays only one line of notes.

The prototype of this class of instrument is the pipe-organ, which came into being to provide several parts simultaneously. It is proper that an instrument of this class should have an individuality, but it should not arise from mechanical limitations as has heretofore been the case, but rather from the difference in musical point of view and emphasis between the individual and the ensemble.

This change in the individuality of the organ, rather than the improvement in size and weight, is the significant contribution to the organ which may be expected from electronics.

At the National Research Council, promising results have been obtained from an organ provided with individual loudness controls on each key, in an effect to extend the expressive powers of the instrument. Some of the pitch control extension devices which were used on the monophonic instrument have been applied to the organ in modified form.

Technical details of the two instruments are given in two articles, "Touch-Sensitive Organ Based on an Electro-static Coupling device" (Journal of the Acoustical Society of America, Vol. 27, No. 4, pp. 781-786, July 1955), and "Electronic Music" (Proceedings of the Institute of Radio Engineers, Vol. 44, No. 4, pp. 457-478, April 1956).

Encoded Performances

The monophonic instrument and the organ thus appear as two distinct classes of musical instrument to which electronics may with advantage be applied. A third type is the encoded performance instrument. Mechanical or encoded performances were popular in the days of Samuel Pepys and Fannie Burney. The idea of a mechanical performance has interested composers from Handel to Stravinsky.

The attraction of this type of instrument is that the composer is entirely free from the limitations arising from the maximum speed at which it is possible for a performer to execute the motions of playing an instrument. The problem is to arrive at a method of encoding a performance which will give enough scope for a composer to work out his musical ideas, without being so cumbersome that a great deal of time is required to write them down.

The design of equipment for encoding and performing has been tremendously simplified by the development of a wide variety of techniques for recording sound, and for storing and processing information.

The design of these three apparently diverse instruments revolves around an objective knowledge of a musical performance. Music is a special type of sound: a musical performance requires a special type of control over the sound.

Once we understand exactly what control is required, the solo instrument becomes a machine designed to give this control as simply and easily as possible. An organ is a number of monophonic instruments combined, with compromises made in recognition of the limitations of the performer. The encoded performance instrument requires simply the ability to write down a musical performance completely.

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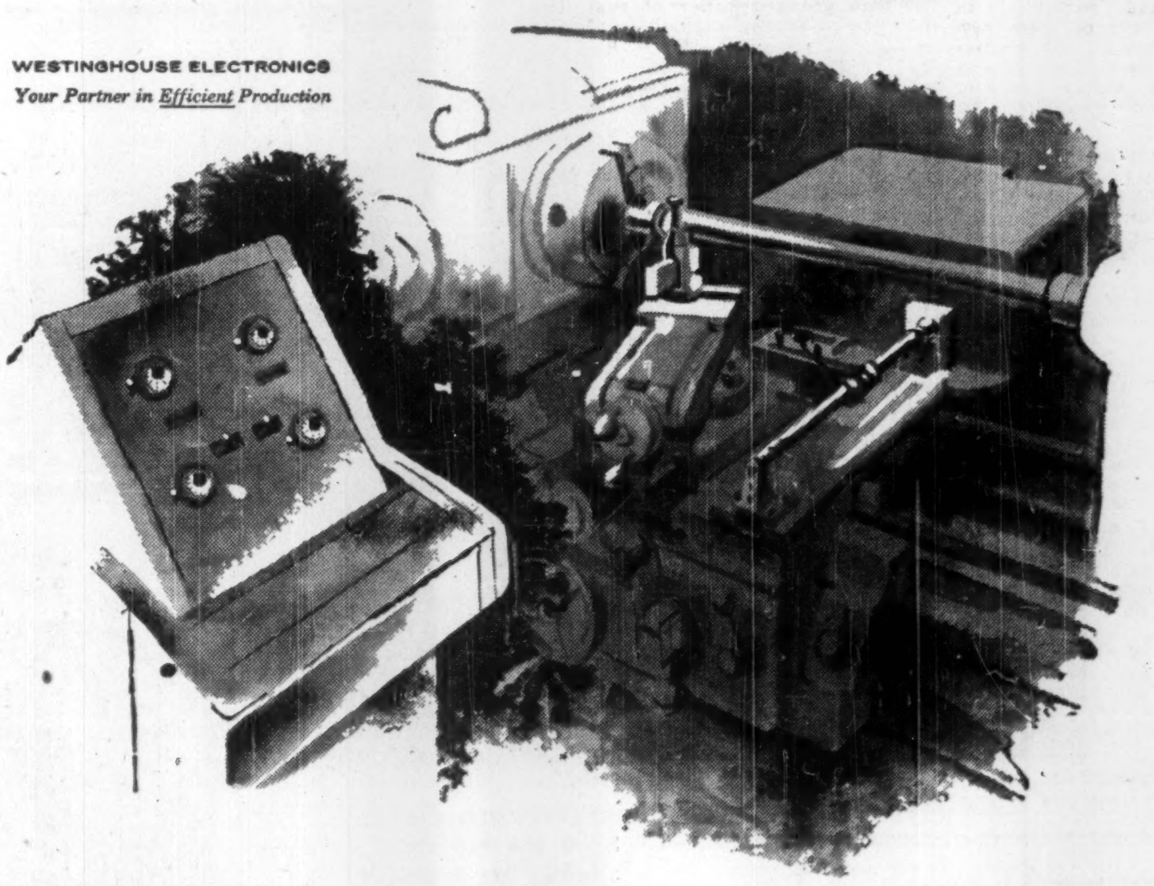

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Ordinary manual tool settings can't possibly give you the close tolerances you need today. Rejects pile up . . . time's wasted in making allowances for wear. But with the new Canadian Westinghouse Electronic Micro-Spacer, you get accuracy to 1/10,000" . . . with never a worry about wear.

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The Industry's Voice

By F. W. RADCLIFFE
General Manager,
Radio-Electronics-Television Manufacturers Association

The majority of manufacturing companies in the Canadian electronic's industry are collectively represented by the Radio-Electronics-Television Manufacturers Association of Canada. Although this association was formally established in 1929, as the Radio Manufacturers Association, its lineal roots go back to 1923.

RETMA has a membership of more than 100 Canadian manufacturers of electronic products and components. They produce over $500 million worth of electronic goods and services each year. They employ over 25,000 production workers and give indirect employment to about 25,000 distributor, dealer, and service personnel.

The association started out with just 11 members.

During the war years RETMA co-ordinated the industry's production of large quantities of electronic equipment for the armed services. At the end of the war, electronic manufacturers faced difficult times due to material shortages and the effect of Government regulations. RETMA engaged in making recommendations to the Government on these matters and helped considerably in having war-time regulations repealed.

The engineering committees of RETMA helped to formulate the engineering standards for both broadcasting and television in Canada, particularly in the early days of these developments when the engineering standards then available had to be very carefully evaluated before their adoption by the industry.

The decisions made at that time have proved to have been based on solid foundations, and were the result of much co-operative discussion and hard work by association representatives.

Following the development of black-and-white television, the association recommended the adoption of engineering standards for color television and is working to make this newest development a practical reality.

RETMA is active in all phases of electronic development. It organizes short-term extension schools for service technicians, assists in experiments to evaluate teaching by television and publishes technical bulletins and engineering standards.

RETMA comprises three Divisions. These consist of a receiver division, for members manufacturing radio and television receivers, a components division, for members producing electronic components and accessories of all types, and an electronics division, whose members manufacture commercial, industrial and military electronic equipment.

The three divisions are governed by a board of 24 elected directors. The emphasis placed on the importance of engineering in the electronics industry is indicated by the fact that a director of engineering serves on the board.

To ensure that there are direct means of communications for quickly-changing events, there are many standing committees reporting directly to the board of directors. These are the committees dealing with government relations with the industry such as defense procurement, broadcasting, tariff policies, industrial and public relations.

The receiver division numbers among its members all Canadian manufacturers of television receivers and the majority of radio receiver and phonograph manufacturers.

Among one of the more important activities of this Division is the market research accomplished by RETMA in the form of regularly-issued statistical reports and industry surveys.

The components division membership includes companies producing the most varied types of electric components, from tiny transistors and rivets to television picture tubes and transformers.

The division is very active in the fields of government defense procurement, tariff legislation, and in other fields of government industry relationships.. It is concerned with the compilation and distribution of engineering data dealing with component standardization, reliability, and specifications for military electronic components.

The large new field of commercial, industrial, and military electronics opened up during the past decade resulted in an electronics division being formed in RETMA.

Manufacturers in this division produce data processing equipment such as computers, oscilloscopes, aircraft intercommunication equipment, radio and television transmitters of all types, ocean depth recorders, nuclear instrumentation equipment, industrial closed-circuit television, radioactive ore locating and mining equipment, microwave and multiplexing equipment, airborne and seaborne sonar equipment and many other types of commercial, industrial, and military electronic equipment.

Members in the electronics division are kept in close touch with Ottawa, and the procurements departments of the Government are kept informed about design, development, and production resources.

To increase the effectiveness of this liaison, a committee is being formed to represent all RETMA.

These Detectives Track Down The Gremlins in Your TV Set

Do streaks and queer patterns cross your TV screen?

Does your radio buzz and rasp?

It can be caused by trouble in power lines, by a loose lamp bulb, by the equipment in a factory. It's called inductive interference.

More than 10,000 cases are investigated in a year by the telecommunications division of the Department of Transport.

The tremendous growth in the number of radio and television sets in Canadian homes has made the problem of inductive interference of major importance.

From the inception of radio communication, laws on the use of radio in Canada have been administered by the Department of Transport. The department has powers to prohibit the use of any equipment causing interference.

What is the extent of this work? The latest annual report shows:

Sources investigated	Cases
Domestic and commercial electrical apparatus	6,205
Electrical distribution systems and power lines	2,191
Defective receivers and radio apparatus	1,786
Industrial, scientific and medical apparatus	128
Miscellaneous	7
Total	10,317

About 90% of the cases are cured after investigation. Certain cases are too expensive to cure.

The Department has made considerable progress in the reduction of interference from industrial, scientific and medical apparatus. Some of this equipment uses circuits substantially the same as a radio transmitter. Industry has a good record of co-operation.

The suppression of interference to television reception is being closely studied. The widespread use of TV sets has created an additional problem because some sets are capable of upsetting radio reception.

The problem of inductive interference has been aggravated by the rapidly expanding growth of electrical appliances both in homes and factories. A lamp loose in its socket or about to burn out is noted as a cause of widespread trouble.

Frequently it has been found that normal equipment of early manufacture, such as diathermy apparatus used in medical offices, can set up interference over long distances.

The Department of Transport, through its telecommunications division, maintains some 50 cars fitted with special equipment for investigating interference. Staffed by trained inspectors, the cars operate from major centres across Canada.

Owners of offending equipment are advised on best methods of suppression. Under present regulations, framed in 1941, suppression can be ordered if it costs less than $50. Over this amount the authority of the minister is required.

Marconi first

IN RADIO-ELECTRONIC COMMUNICATIONS EQUIPMENT

Canadian Marconi Company, first in the field in the beginnings of Radio, has steadily maintained a position of leadership in every development of radio-electronics. Today, we take particular pride in offering Canadian industry a complete range of the most advanced communications equipment.

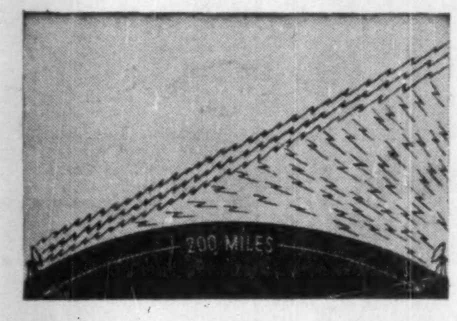
From this range, Marconi electronic experts are able to meet and adapt to the exact requirements of your operation. In conventional Microwave and Radio Relay, and in "over-the-horizon" Forward Scatter Systems, we are contributing to the advancing pace of industry the quality of research, development and production that has long earned world recognition for our Company.

RADIO RELAY

The most advanced facilities for multi-channel telephone traffic are today afforded by systems designed and produced by Canadian Marconi Company.

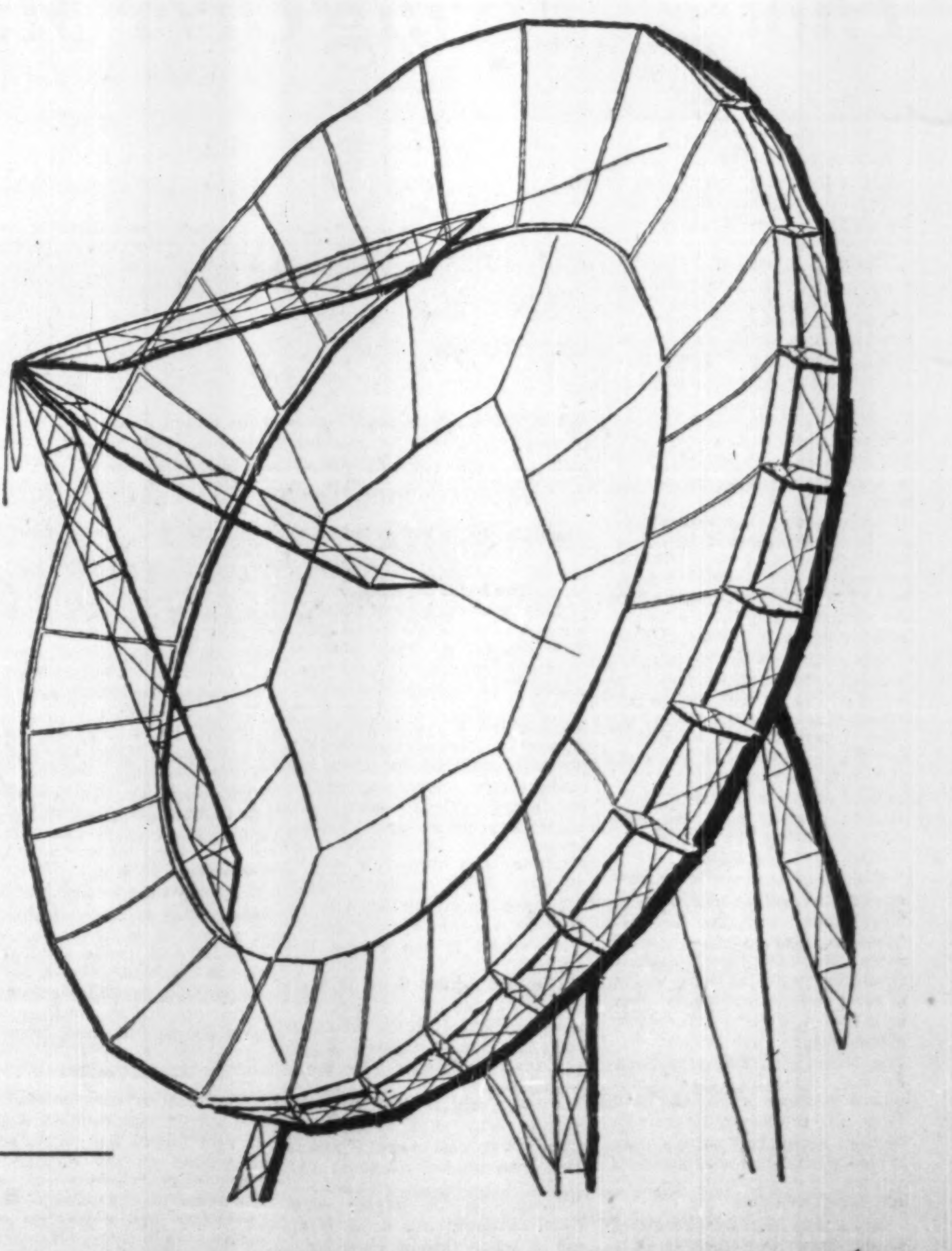
MICROWAVE

In black-and-white and color Television, the latest Marconi Microwave techniques assure highly effective relaying over long and short distances.



FORWARD SCATTER

Especially valuable in remote or mountainous areas, or for military installations, Marconi Forward Scatter Systems provide reliable multi-channel telephone communications over long distances without the need for intermediate stations.



Marconi cmc

CANADIAN MARCONI COMPANY—MONTREAL 16, QUEBEC

CANADA'S LARGEST ELECTRONIC SPECIALISTS

Harness Sunlight's Energy To Power Telephone System

An experimental scheme for converting the energy of the sun into electricity is being tried out by Bell Telephone laboratories in the U. S. It's a solar battery mounted on top of a telephone pole.

The solar battery is not the first converter of solar energy to have been put into useful work. There have been the thermocouple and the photo-electric cell. But never before has there been what amounts to continuous service from this source. The battery is, in addition, at least 15 times as efficient as the best of the previous converters of solar energy.

This is due to the fact that with this device it is possible to store the power generated in the hot sunlight, and not needed for immediate use, in a storage battery which becomes the "prime mover" during the night or when the weather is cloudy.

The solar battery consists of a number of specially prepared discs of wafer-thin silicon, about the size of a quarter, which have been mounted in groups of six, assembled in an aluminum housing and electrically linked together so that they form a 432 cell unit. The cells are cushioned in oil and covered with glass.

The silicon, which is extremely sensitive to light, is obtained originally from common sand, of which it is one of the principal constituents. It is a semi-conductor and has properties similar to those of germanium, the material used in most transistors.

Techniques similar to those employed in the production of the transistor are used in the manufacture of the wafers used in the solar battery.

Silicon cells can convert as much as 11% of the energy they receive into electrical energy, an efficiency ratio not too unfavorable when compared with that of gasoline and steam engines. The cells can deliver power at the rate of 100 watts per square yard of effective surface and will continue to charge the storage battery at a lower power in poor light.

The solar battery has no moving parts and contains no corrosive chemicals. It is, therefore, capable of indefinite life, and should require little maintenance, whilst being able to supply power at a rate of 10 watts continuously by means of the storage cells.

How Far in Medical Tomorrow Is Electronic Robot Doctor?

What is the market for electronics in hospitals, surgeries?

Are Canadian doctors electronically up-to-date?

Is punch-card diagnosis on the way in?

Dr. John F. Davis, biophysicist to Allan Memorial Institute of Psychiatry, McGill University and consultant in medical electronics to Royal Victoria Hospital and Montreal Neurological Institute, has written this report:

By DR. JOHN F. DAVIS

Although the applications and developments of medical instrumentation now number hundreds, if not thousands, they provide a very small market indeed when contrasted with the electronics market as a whole.

We venture to say it will always be thus. The field will expand, but slowly, along with the natural growth of hospital facilities and the arrival of new developments useful in medical research.

We suspect that there will always be more tubes and transistors in use in the hospitals for elevator control, automatic door openers, paging systems and TV and hi-fi installations for the entertainment of patients than will be found in laboratory instruments.

But behind the scenes in every hospital and medical school are small groups of engineers, physicists and technicians who, working together with neurologists, surgeons, psychiatrists and other medical scientists, are bringing to bear more powerful techniques in the endless search for the causes and cures of disease.

A large proportion of the new instrumentation in medicine is of an electronic nature, but here, one must look at things in their proper perspective.

The increasingly popular idea that doctors use more and more elaborate instruments and tests to measure and tabulate the ills of patients and that they are proceeding inevitably toward a kind of impersonal, ultra-scientific, punch-card medicine is nonsense. "Automation" has not yet entered the clinic, and most of us hope that it never will.

Not Mass-Produced

Medical electronics is a tool which finds use wherever the medical scientist is faced with the problem of measuring, extracting data from, or injecting stimuli into living tissues and organisms. This is the area known generally as biophysics (the meeting-point of physical systems and biological systems) and medical electronics is just one of the techniques exploited by biophysicists.

As a consequence, most of the devices designated as medical electronic instruments are used purely in research and may have rather short life expectancies because of the ever-changing needs of the research world.

The instruments in use at any one time are modified or enlarged versions of the ones used at the previous level of development. Only very rarely does one of the new instruments find use in the clinic or even in the medical laboratory, so the opportunities for mass production (or even small-scale production) are extremely limited.

ELECTRODES and other attachments will record this woman's muscle potentials, blood pressure, respiration, skin potentials, speed of performance, etc., altogether 13 physiological measurements, as she takes a mirror-drawing test.

DR. J. F. DAVIS

Canada's Success

This country has not stood idly by while medical science in the rest of the world has taken up advanced biophysical and medical electronic techniques. Canada has taken a leading part in some lines. To mention a few Canadian names, outstanding amongst the biophysicists of the world:

Herbert Jasper (Montreal Neurological Institute) whose contributions in neurophysiology, electrophysiology and the interpretation of the electroencephalogram in particular have brought him international recognition as an authority;

Kenneth Evelyn (British Columbia Research Council, formerly of McGill University) whose name is associated with one of the earliest photoelectric medical colorimeters and who did valuable biophysical research during World War II;

A. J. Cipriani (Atomic Energy of Canada Limited) who was well-known in the evaluation of radiation hazards before his recent untimely death;

H. E. Johns (Ontario Cancer Institute, formerly of the University of Saskatchewan) who played a very prominent part in the development of the cobalt "bomb."

Alan C. Burton (University of Western Ontario), biophysicist extraordinary.

These, and many others not named, have been instrumental in focusing at a point the converging beams of biology, medicine, physics and electronics. Each has brought forth from this unique combination some new medical tool or technique or diagnostic aid. Each has made personal contributions or has stimulated others to make contributions to the field of medical electronics.

The Canadian electronics industry has also taken some initiative in the development of new medical instruments. For some time there has been a need for one or more small, low-overhead, industrial ventures into medical electronics in Canada.

But, the Canadian market is not ready for large-scale production or services in this field.

The few large Canadian corporations which have put up trial balloons in this area have not, I am sure, been overwhelmed by the demands of the market, but at least they have been sporting enough to try it and, in all fairness, it is hoped that the demand will grow — fast enough to keep the balloons airborne.

Direct 'Wire' to Weatherman Though Flying Over Mid-Ocean

By B. G. DOUTRE
Telecommunications Engineer, Trans-Canada Air Lines

Airliners flying over the North Atlantic may soon have a direct wire to the weather office if experiments now being carried out prove successful.

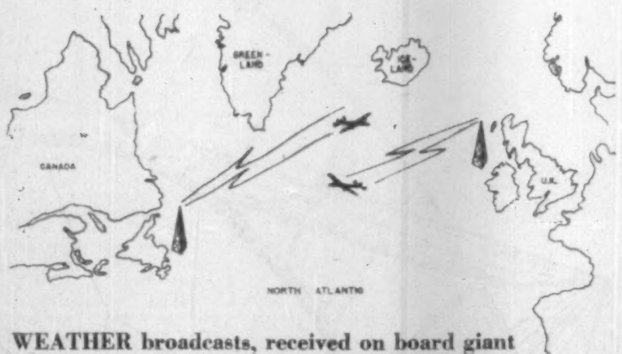
The work, sponsored jointly by a group of transAtlantic airlines in Europe, Canada and the U. S., is part of continuing efforts to head off communication traffic jams as more and faster aircraft join the Atlantic circuit.

Two powerful, low-frequency broadcast stations are planned, one on Canada's east coast and the other in Scotland, to spread a web of overlapping signals over the oceanic air routes. Meteorological land-line networks on both sides of the ocean will be tied in with the transmitters, so that weather reports and other vital information can be printed automatically on a small machine in the airplane.

The airborne printer is a lightweight version of machines to be found in almost any telegraph office. It is about the size of an office typewriter and weighs 33 lb. Received material is typed, at 60 words per minute, on a continuous roll of page-width paper. Special devices turn the machine on and off in response to signals from the ground.

Connected between the printer and the special aerial, a 15-lb. "black box" contains the distilled engineering know-how of more than 50 years' experimentation with the long waves of early radio. Once passed over in the rush to develop the more elegant short-wave communication techniques, long-waves are finding increasing applications where extreme reliability and long distances are involved. Modern technology has largely solved the problems of size and weight of equipment designed for these channels.

Automatic weather receivers might have been considered a luxury a few short years ago. However, recent trends toward higher speeds and greater traffic density have combined to force streamlining of radio facilities and procedures on the North Atlantic.



WEATHER broadcasts, received on board giant passenger planes by special receivers, will be sent out via this proposed service over the North Atlantic.

The Air is Crowded

Radio is the lifeline of the airplane once it has left the ground. The complex air traffic control situation requires speedy and efficient two-way communication to ensure safe and orderly progress of all flights in an area. Because of the paramount importance attached to safety in commercial operations, communication delays mean that controllers must space flights farther apart. Hence, while an airplane is a relatively small physical object on the ground, the space it occupies in the air is directly related to the speed with which it can report its position.

The astonishing thing is that even today, on peak nights, the vast reaches of North Atlantic skies become saturated and flights are delayed in New York or London.

A spot check last May 5 showed that, at 4 a.m., there were 110 aircraft over the ocean. This is no unusual situation. According to estimates, commercial passenger flights across the North Atlantic will grow from the 25,000 in 1956 to some 216,000 in 15 to 20 years. In addition to this vast shuttle of civil airliners, military aircraft are crossing the ocean at the rate of some 30% of the commercial traffic.

Communication, obviously, is not the only factor to be reckoned with in this tremendous expansion. But efforts in this field typify the airlines' concern to absorb the onrush of business without compromising either safety or convenience.

From its very beginning, transAtlantic flying has faced a double challenge; weather and communications. The on-schedule flight requires careful planning and a continuous stream of up-to-the-minute weather information. It is not idle sociability when a pilot south of Iceland wants to know if the fog is lifting in Montreal—he will soon have to decide whether to stay in long-range cruise, ekeing out his fuel, or whether he must climb to higher altitude and alter course for Goose Bay.

Storm Troubles

This vital concern for weather, and the growing number of concurrent flights, has led to some congestion on the regular Atlantic communication channels. There are over a dozen of these party-line radiotelephone circuits.

But time and distance make some frequencies useless for certain aircraft and, occasionally, the bombardment of radiation and particles from sunspots blanks out all but one or two channels.

These radio storms, silent and invisible except for resultant displays of Aurora, tear into shreds the finely balanced reflecting layers of electrified air which make long-distance communication possible.

The idea of broadcasting weather information to all aircraft simultaneously was evolved some time ago. To date, voice transmissions have had only moderate success, for two main reasons: they leave no permanent record for later reference, and they seldom give complete coverage over all areas at all times. As a result, busy airliner crews have found it simpler to request specific weather reports as they need them.

In order to clear the airwaves for the growing traffic control communications, project NARCAST, North Atlantic Radioteleprinter Broadcast, was organized early in 1954. Its objective was to foster development of the techniques and the equipment for a highly reliable printing weather broadcast system on the North Atlantic.

Following a preliminary feasibility study, airline engineers enlisted the help of government, industrial and military agencies. It took just 18 months from the writing of specifications to the first experimental flight.

Manufacturers contributed equipment in a bid to open up new markets for their products. Government and military people, directly concerned in the establishment of new communication facilities, provided temporary broadcasting stations and other assistance.

The airlines responsible for the test program have so far completed 30 flights. Probably 100 more will be made before engineers are satisfied that the system will work as planned. Once the final results are analyzed another step may have been taken in taming the mighty North Atlantic.

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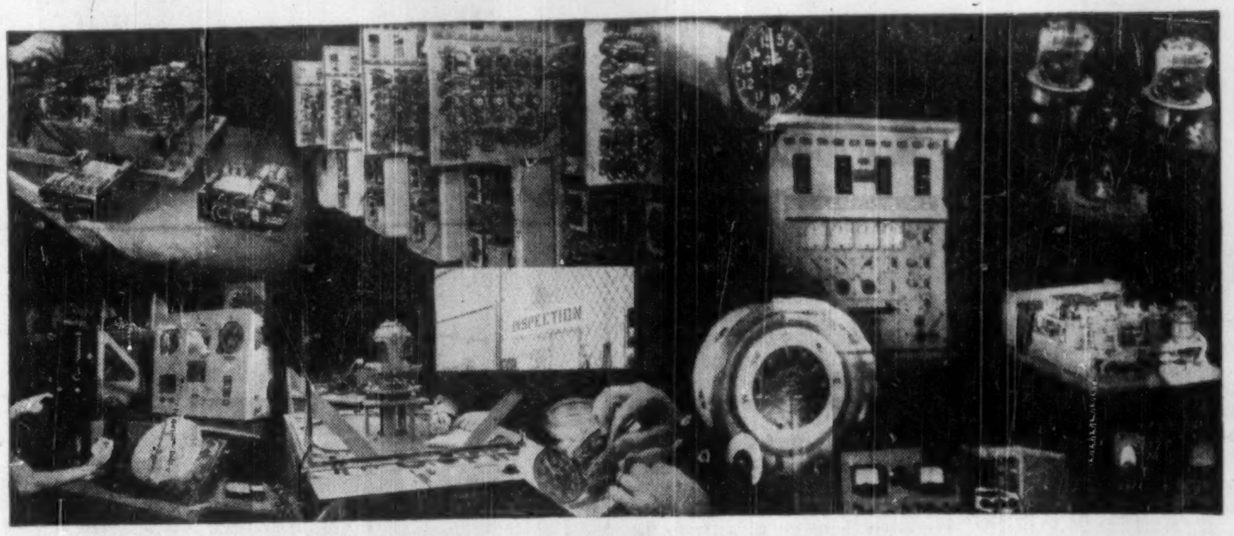

ability to build

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IBM DATA PROCESSING

**During 1955, IBM announced a major data processing improvement every [illegible]*

THIS BUILDING ENGINEER can read temperatures from 400 points throughout his building by simply dialing a code number, in this electronically controlled heating-ventilating-air conditioning system manufactured by Minneapolis-Honeywell. The number dialed shows in lights, the temperature appears on a scale. This engineer can make adjustments directly from the control room.

Electronic Remote Controls 'Run' Building Heat System

Remote elecronic controls are being used to regulate the heating and air conditioning of large modern buildings. From a single point the climate in any individual room can be changed.

The first two systems of this kind to be installed in Canada are going into buildings still under construction: the modern B.C. Electric Co. building in Vancouver and the Queen Elizabeth Hotel in Montreal.

Made by **Minneapolis-Honeywell Regulator Co.**, the systems are designed to reduce the cost of operating an air conditioning system and to improve its performance.

For the home, another electronic control system called Electronic Moduflow is bringing new concepts of comfort in heating and cooling.

Because of the sensitivity and speed of electronics, as little as one-quarter of a degree change in temperature allows the system to turn a home's heating plant on or off; before the occupant of the house is even aware of a change in weather conditions.

Electronic Moduflow uses an electronic outside weathercaster or thermostat which is sensitive enough to react to the slightest temperature change.

How Missiles 'Talk' To Scientist Masters

"The impetus Canada's guided missile program has given to electronics in peace time has no parallel," says Dr. Leon L'Heureux, deputy chief superintendent of the Defence Research Board's Canadian Armament Research and Development Establishment, Valcartier, Que.

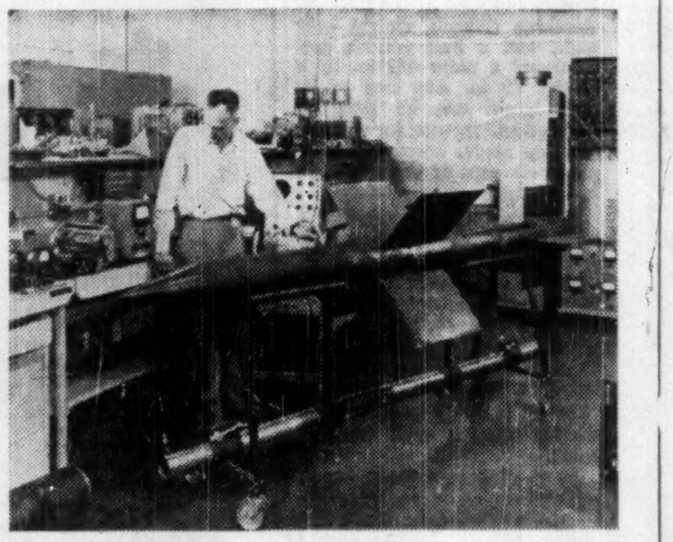
Here Dr. L'Heureux outlines the problems and solutions, many of commercial value, in guided missile development:

By Dr. L. J. L'HEUREUX

It requires the teamwork of the best scientists and engineers available, both in research laboratories and in industry, to meet the demands of guided missile specifications. Functions never before physically represented have to be generated by electronic means.

Space and weight in a missile are always at a premium. Everything must be small and light. Circuits have to operate with great accuracy in extreme temperatures and under the stress of large dynamic forces.

Miniature tubes, capacitators, resistors and other electronic components are too big, too heavy. They must be sub-miniature, stronger, less sensitive to shock and vibration and yet maintain reliably a level of performance beyond all normal standards.



THIS IS the "Velvet Glove" missile, whose intricate electronics system was designed and developed by Canadian Westinghouse.

Here are some of the problems that one faces when firing an experimental guided missile. Apart from finding out acceleration rate, velocity and position, one has to measure, depending on the purpose of the test:

- The output of the intelligence system in the missile to find out if it knows accurately the position of the target at all times.
- The voltages of the control systems to verify that proper commands are being given to the control surfaces.
- The deflection of the control surfaces to determine if they are obeying correct commands.
- The bending of the body and wings.

The Way It's Done

Photographic and electronic instruments are used to make these tests. Tracking cameras and radars view the missile from remote posts. Radio telemetry is used to measure what is happening inside the missile. In general, this is how radio telemetry works:

The piece of information being measured, such as rotation of wings, acceleration, is given a code. It's a different code for each piece of information being measured at one time.

All these codes are fed into a transmitter in the missile and relayed to a receiver on the ground or in a ship. The receiver does the decoding. Such a thing as wing shaft rotation at a certain time of flight is measured to an accuracy better than one thousandth of a second.

The information received is analysed and compared with the simulated flights that are carried out on an electronic computer. Corrections to the inputs fed to

(Continued on page 58)

Future Will Demand New Kind of Expert

Who will be needed in the electronics research laboratories of tomorrow?

Will it be the trained electrical engineer or the research physicist?

Are Canadian universities ready?

These vital questions are answered for The Financial Post by Dr. Garnet A. Woonton, chairman of the department of physics, McGill University.

By DR. G. A. WOONTON

The Institute of Radio Engineers has sponsored meetings for more than 40 years but never have such meetings played so important a part in the education of the electronics engineer as they do today. Electronics is becoming steadily more complicated and in many respects, is moving closer to the pure sciences in which it has its source.

In his product, the electronics engineer is forced to incorporate the very recent discoveries of the physicist, the metallurgist and the chemist.

A few months ago, F. E. Terman, a former president of the IRE, pointed out that 40% of all the papers which appear in the journal are written by other than engineers and for the most part, by physicists and mathematicians.

Terman, himself an electrical engineer and dean of the faculty at Stanford University, predicts that in 10 years' time electrical engineering will be synonymous with what we now call electronics and that by that time a complete revision in the education of the electrical engineer will have become necessary.

A New Device

The breadth of knowledge which is required from an electronics engineer can be illustrated by a short history of a new device called the Maser. If its description is difficult, at least the moral is simple: the creative electronics engineer will be forced to learn more and more mathematics and physics as the subject of electronics develops.

The Maser is so new that there are yet no published papers dealing with its direct application to electronics and, in fact, there may be many reasons as yet unexplored why it may remain a device to be used only by physicists in the research laboratory.

Nevertheless, its possibilities are sufficiently significant to have been discussed this summer at the Boulder, Col. meeting of the IRE and it is certain that engineers in not a few laboratories have been assigned the task of understanding the theory of its operation and of assessing its potentialities as an lectronic device.

The word Maser is constructed from the initial letters of the phrase Microwave Amplification by Stimulated Electromagnetic Radiation. About two years ago, several Russian authors discussed the principle of the device in a Russian journal. Quite independently, one year ago, members of the department of physics at Columbia University published the theory and the details of the working apparatus in the Physical Review.

The device can be used as either an amplifier or a generator of electromagnetic radiation which, in the Columbia model, has a frequency of about 23,870 megacycles per second, that is to say, has a wavelength in the order of one centimetre. In consequence, the Maser promises to be a new tool to be used in the exploitation of the short wavelength end of the microwave spectrum.

It is unique among amplifiers for it produces almost no electrical noise in its own right and hence is capable of amplifying signals many times smaller than could be handled by a traveling wave tube or other beam type amplifier at the same frequency.

How it Started

The Maser makes a good illustration of the nature of modern electronics, not only because it gives some idea of the breadth of knowledge which may be demanded of the electronics engineer, but also because it seems possible to discern how it came into existence.

In that story may be seen the interaction between the demand of the user, the interest of the physicist in phenomena and the drive of the engineer to apply techniques and phenomena.

During the last war, pressure from the military for the development of more accurate radar was very great. Many physicists engaged in research in this subject and as a result the microwave portion of the radio frequency spectrum was made available for use. By the end of the war, radars operating on wavelengths near one centimetre were not uncommon. After the war, the physicists turned from application to a renewed study of phenomena and some of them began to explore the implications of the wartime discovery that the shorter radar waves were selectively absorbed by oxygen and water vapor in the atmosphere.

From this beginning, there developed the whole subject of microwave spectroscopy which has been very productive of information concerning the structure of gaseous molecules. One of the first molecules to be studied, one of the most interesting and that which used in the Maser was ammonia, the gas used in refrigeratin plants.

These Are the Needs

The Maser was discussed only to point out the unity of the pure and applied sciences in the field of electronics and the need for engineers trained in the pure sciences, or for physicists with a sound knowledge of engineering. But there is another side to this picture. It serves to emphasize the need for broad training.

Researches in the pure sciences have been accelerated and sometimes made possible by the use of electronic instruments and techniques. The cyclotron, fundamentally, is an elaborate vacuum tube. The atomic pile could not be used without its elaborate electronic instrumentation and controlling servomechanisms. The nuclear physics laboratory bristles with electron multipliers, cathode ray oscilloscopes, pulse amplifiers, pulse height sorters, and other electronic apparatus.

But most of these instruments, with some important exceptions, have been devised by physicists, not because of superior ability with electronics but because only the man who knows the need can produce the instrument.

From the point of view of the pure sciences as well as the applied, there is a need for the man who knows and understands the philosophy of both but finds his pleasure in application.

Not Enough Students

In Canada the need for trained technical personnel who can cross the bridge between the pure and the applied sciences has been recognized by the universities for many years, but the number of students graduated from such courses is completely inadequate to the needs of the country.

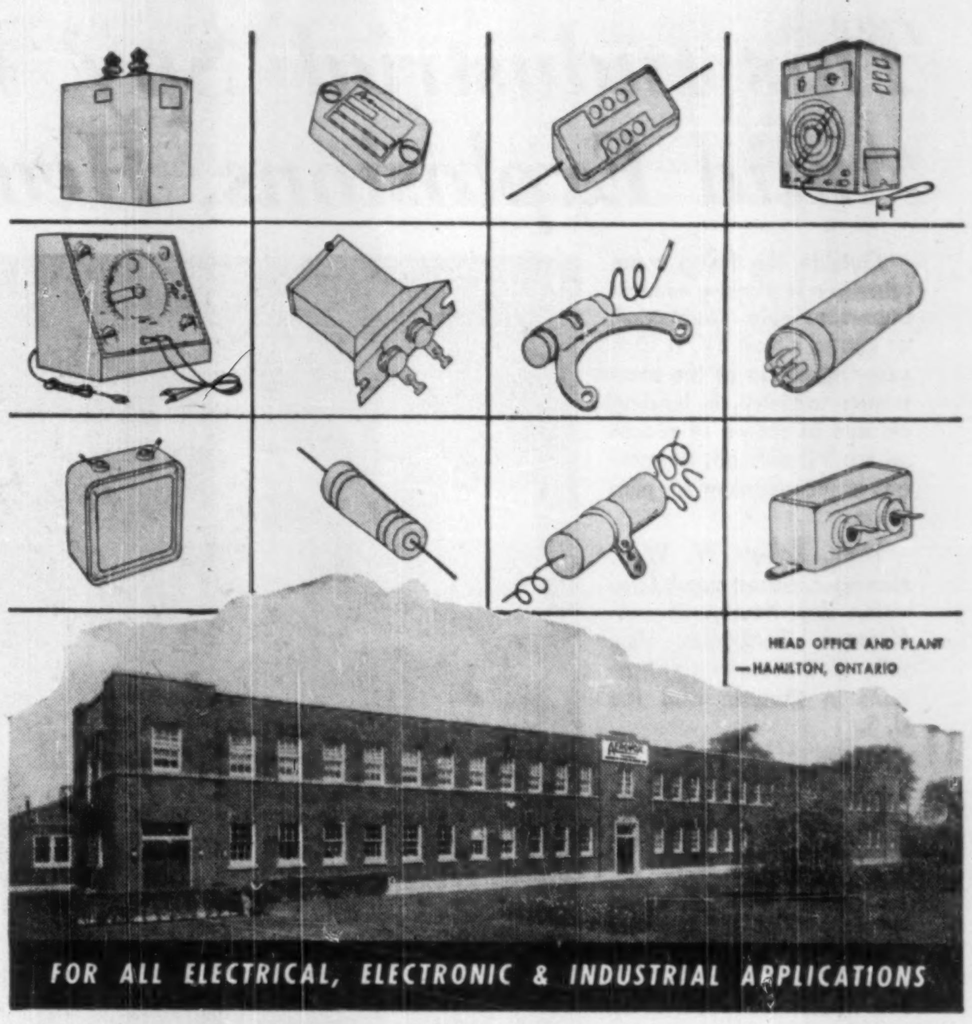
The University of British Columbia, Dalhousie, McGill, Queen's, Saskatchewan and Toronto universities all offer courses in engineering physics. At McGill, this course is one year longer than the standard physics course and includes nearly all the usual undergraduate courses in mathematics and physics as well as the essential engineering subjects.

In addition to engineering physics, a few of the universities have options in communication engineering. In the U.S. some of the leading universities are attempting to remedy the situation by a radical revision of the electrical engineering curriculum.

In Canada experiments with this type of revision are proceeding in only one university, the Faculté des Sciences of Laval; the revision has been under way for some time and will be complete at the end of two more years. It is to the credit of the department of physics at the University of Western Ontario that the need was foreseen more than 10 years ago at the end of the war. A completely new four-year course in Radio physics was instituted. It has met with considerable success in its effort to produce graduates equipped to meet the demands of the new field of electronics.

Graduate training and research in electronics in Canadian universities has grown rapidly since about 1945. In many cases this growth has been materially assisted by substantial grants from the Defense Research Board and the National Research Council. Research in this field is being carried on successfully by the electrical engineering departments at the universities of British Columbia, McGill, Saskatchewan and Toronto.

Research in some field of electronics is proceeding in most of the physics departments across the country and at McGill, a research institute, the Eaton Electronic Research Laboratory, has been established which is devoted entirely to graduate teaching and research in electronics.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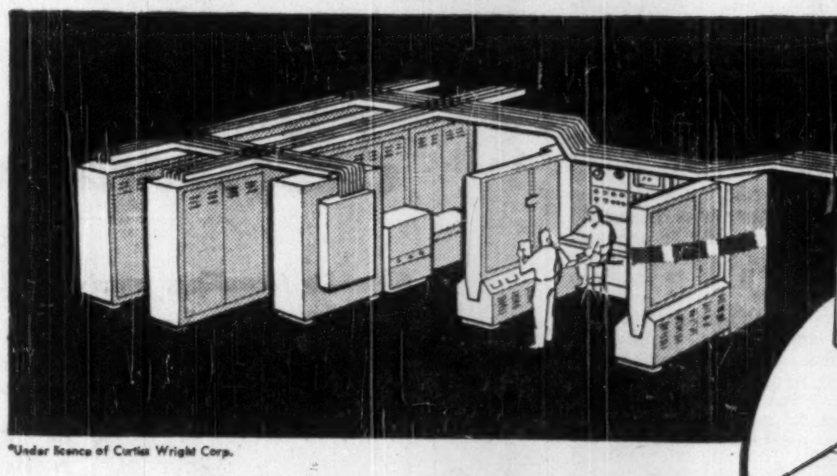

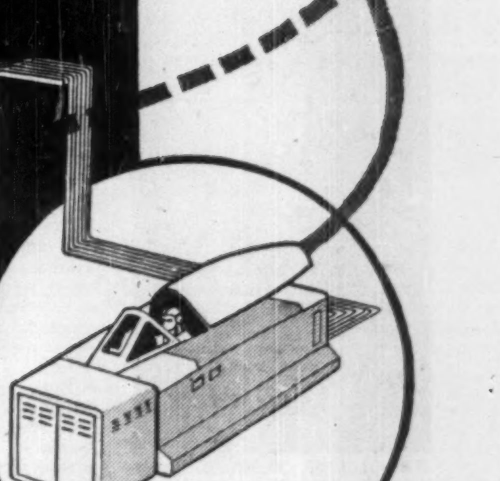

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This Industrial 'Spy' Works Amid Explosions, Heat, Cold

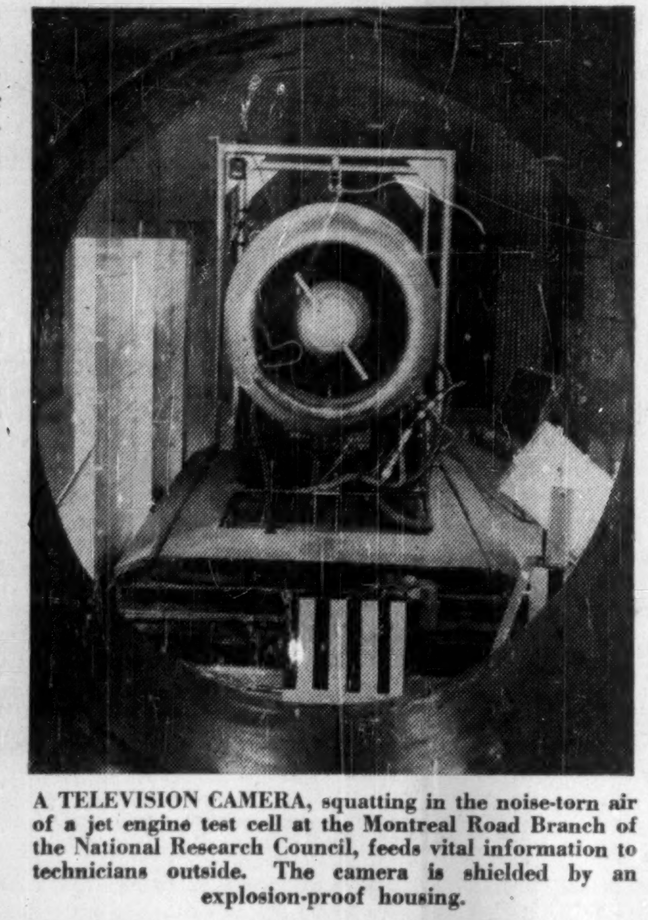
Outside the living room television is playing its most important role. Industrial, or closed circuit TV, a fast-growing phase of the electronics industry, is lending an eye in scores of places where it is difficult, dangerous or inconvenient for men to go.

Here, Robert W. Weir, manager, closed circuit television department, Rogers-Majestic Electronics Ltd., tells of the many applications in Canada and the U. S.

By ROBERT W. WEIR

Tireless, efficient and automatic, T.V. cameras are cutting costs and promoting safety in a hundred and one routine or special operations.

- Closed circuit T.V. helped locate the underwater wreckage of the Comet airliners.
- Scientists at the National Research Council are using it to observe the effects of icing on powerful jet engines.
- The Steel Co. of Canada has television cameras set up on its continuous galvanizing and annealing lines.
- U.S. banks and insurance companies are using closed circuit T.V. to permit centralized bookkeeping and record filing on low cost floor space. It saves thousands of dollars in rent and building costs.
- T.V. cameras are on the job in warehouses, department stores, railroad freight yards, hospitals and research laboratories.



A TELEVISION CAMERA, squatting in the noise-torn air of a jet engine test cell at the Montreal Road Branch of the National Research Council, feeds vital information to technicians outside. The camera is shielded by an explosion-proof housing.

Much of the recent progress made with industrial T.V. stems from the development of small compact cameras which can be used in almost any place which it is desirable to keep under observation. One of the smallest of these — a transistorized unit weighing less than two pounds — was responsible for many of the candid camera shots of delegates to the Democratic and Republican conventions in Chicago and San Francisco. It was designed originally for inspecting the insides of boilers.

Another relatively new camera, developed by **Dage Electronics** and used by the National Research Council, weighs only eight and a half pounds, and measures a mere 4½ in. by 6 in. by 10 in. Any one of its four lenses can be remotely selected and focused for a choice of wide angle, normal or telephoto closeups of the operation under study.

Using nationwide microwave links and rented receivers, color or black and white, a closed circuit T.V. show introducing a new line of products may cost its sponsors tens of thousands of dollars. Most television installations in business and industry, however, cost no more than the price of a small camera, companion viewer and co-axial cable.

Many of them, using one camera and screen, represent an investment of less than $3,000. The distance from viewer to receiver is usually between 1,000 and 4,000 ft. Beyond 4,000 ft. repeater amplifiers must be used.

According to some studies as much as 80% of the intelligence required to run a business or industry is obtained through the human eye. By providing visual information from remote and potentially dangerous places, closed circuit T.V. is providing fresh and routine intelligence on many kinds of industrial processes and scientific projects.

Use of industrial T.V. by the jet engine laboratories of the National Research Council is an example of the way in which it can be used to watch potentially dangerous operations from a safe vantage point. For the past few winters a group of N.R.C. scientists, led by N. S. Kuhring, has been observing the effects of icing on jet engine performance.

Electronics Does Many Tasks In Modern Industrial Plants

In steel plants and in saw mills, in mining and paper-making the electron tube is at the heart of new machines that increase speed, accuracy, control.

The uses of electronics in industry are manifold. Here they are examined by H. M. Turner, president of the Canadian Electrical Manufacturers Association. Associated with the Canadian manufacturing industry since 1926, he is chairman of the board of Canadian General Electric Co. Ltd.

By H. M. TURNER

Canadian electrical manufacturers are constantly finding new uses for electronic applications in their customers' plants — and are selling those customers on the ability of the applications to do jobs better or more economically, or to take on jobs that could not be done otherwise.

Some 25 years ago the application of electronics in industry was in its infancy in Canada. But today literally hundreds of types of electronic equipments are at work in virtually every branch of industry.

HAROLD M. TURNER, president, Canadian Electrical Manufacturers Association.

Why use industrial electronics? Industry today has a continuing requirement for closer control of production because of higher operating speeds, more critical processes and the growing demands of automation. Electronics provides the answer in supplying accurate and fast control, plus the sensing of minute signals in the equipments that regulate the processes of production.

Some industrial applications using heavy power loads require a tremendous number of current interruptions. If electro-mechanical devices are used for interruption, considerable maintenance expenses can be incurred because of the inertia of these devices and their need for moving parts. Electronic equipment has none of these disadvantages.

Industrial electronic equipments today are nothing if not versatile. Their functions include positioning, speed matching, current and voltage control, temperature control, color matching, motor control, counting process control, inspection, measurements and testing, power rectification and frequency changing.

What Tubes Can Do

Electronics is basically the putting to work of the characteristics of the various types of electron tubes. These electron tubes, together with associated circuits, give operation unequaled by other kinds of electric equipment in use in industry. for example:

- Electron tubes can respond to very small control signals, and produce a corresponding but larger signal.
- Electron tubes can respond at speeds far beyond those attained by the most sensitive moving devices.
- Acting at high speeds or high voltages, electron tubes can produce special radiations, such as X-rays.
- Some kinds of electron tubes respond to light, serving as "electric eyes."
- With alternating voltage applied, electron tubes can carry current in one direction, while refusing to carry it in the opposite direction. In this way, tubes change or rectify alternating current into direct current.

All these characteristics can be put to work in industry.

Much electronic equipment is available "off the shelf" from electrical manufacturers. These standard items include electronic timers, photo-electric devices, electronic relays, packaged adjustable speed drives, and electronic control for welding.

Custom-built electronic equipment is available for speed, voltage, tension and position regulation and for automatic machine tool applications. Often the electronic element in a machine or process is but a small part of the entire electrical installation. Dollar-wise, industrial electronic equipments provide precision control at a reasonable cost.

Over the years, Canadian industry has turned increasingly to industrial electronics, recognizing it more and more as a valuable tool to improve output and lower costs.

In steel plants, electronic X-ray thickness gauges measure and correct steel thickness when the metal is traveling 4,000 to 5,000 ft. min.

Printing presses are using more and more electronically powered equipment as extremely efficient, extremely flexible speed controls.

The lumber industry uses electronics for metal detection in logs.

In mining, electronics finds its place in feed rate controls for efficient ore grinding and for acceleration control of mine hoists.

In the paper industry, electronically controlled paper machine drives regulate very closely the speed of various sections of complex paper-making machines, some of which are nearly a city block long. In one specific application in this field, electronic controls regulate the speed of machines processing paper up to 25 ft. wide. These machines require upward of 2,500 hp and are controlled — electronically — to within one tenth of one percent, or to within one foot a minute at speeds of up to 2,200 ft. min.

'Missiles Talk' To Their Masters

(Continued from page 57)

the computer are improved as results from each test flight become available.

Enormous and complex problems faced the electronics engineer in the development of telemetry. Because of the cost of test missiles, reliability and accuracy were all-important.

The needs of guided missiles led to the development of radio telemetry. It is available now for many other applications. It will be providing information from the space satellite, soon to be launched as part of the International Geophysical Year program.

DR. L. J. L'HEUREUX

Radio Explores Outer Space

A research project in radio astronomy has been established at the University of Toronto. It is aided by a grant from the National Research Council.

Here, Dr. Donald A. MacRae, department of astronomy tells about the project.

By DR. DONALD A. MacRAE

Radio astronomy is a new science, but already it is claiming a big share of government research money.

Since 1952, Britain has earmarked £1,150,000 for two research establishments at Manchester and Cambridge. The U. S., a slow starter, now plans a national radio observatory at a construction cost of $5,070,000, according to a report from the National Science Foundation.

In the last two years Holland has allotted to radio astronomy one quarter of its government funds for scientific research and it has had the world's largest radio telescope. This month West Germany mounted a twin to the Dutch telescope near Bonn.

Australia's postwar effort has made her a leader in this branch of electronic research. Reports from Russia indicate a larger program in line with that government's emphasis on scientific and engineering development.

Canada had one of the first radio telescopes for studying the sun, at Ottawa in 1945, and this year the National Research Council has made a grant to the University of Toronto to set up a research project.

Why this financial support?

Radio astronomy, like traditional astronomy, is the study of objects beyond the earth, but radio waves instead of light waves are received by the telescope. Already radio telescopes are hearing from near the edge of observable space, perhaps from beyond the range of even the great 200-in. Palomar telescope.

Nearer at hand the radio emission from the sun produces cosmic rays, northern lights, and often the breakdown of long-distance radio communication.

A study of the sun by radio will contribute to our understanding of the upper atmosphere, its effect on communications, as well as, possibly, on climatic change.

Radio stars, exploding stars and colliding galaxies are like laboratory synchrotrons on a colossal scale, affording an opportunity unmatched on earth to study atomic processes and check physical theories.

The potentialities of the science have stimulated radio engineering. New designs, more and better trained engineers are the product.

But radio astronomy is essentially basic research providing a reservoir of fundamental knowledge beyond immediate practical application. Most industries and governments agree that such reservoirs are desirable if not indispensable.

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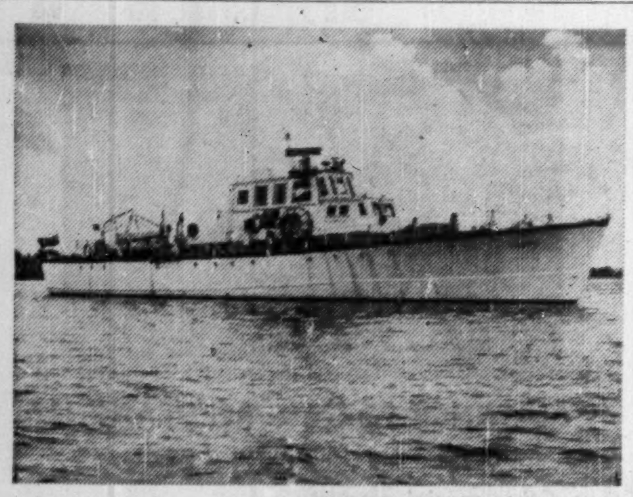


SHIPBOARD electronics equipment, under development by the National Research Council, is tested on board the MV Radel (top), now based on Lake Ontario. A 10-ft. radiotelescope (below) is used to study the sun's radio emissions by NRC's Radio Astronomy Observatory.

Meteor Trails Bounce Voices

Canada's vast distances and scattered population have made the need for better communications urgent.

Janus was a Roman god who could look two ways at once, ideal for communicating. His name has been borrowed to describe Canada's latest communications project — the Janet system.

How it works, what it means, are described by Dr. P. A. Forsyth, the Defence Research Board physicist who discovered the concept.

By DR. P. A. FORSYTH

The Janet System is a new means of communication by radio over distances as great as 1,000 miles. It may be an answer to these two problems:

- The overcrowding of short-wave bands due to the increased need for communication capacity.
- The frequent disruption of communication circuits in Northern Canada by ionospheric storms.

For many years it has been known that radio waves in the very high frequency band — the band now used for most television broadcasts — were not affected by ionospheric storms. On the other hand these waves were reflected only rarely by the ionospheric layers and so could not be used for communication beyond the horizon.

What was needed was something high up in the atmosphere which would bounce the radio signals back down to the ground at a distant receiving station. If the wavelengths between the short-wave bands and the television bands could be utilized in this way it would more than double the number of channels available for long-distance communication.

DR. P. A. FORSYTH, Defense Research Board physicist.

In the Janet system the radio signals are bounced off the transient trails of meteors. Every hour of every day the earth collides with millions of tiny fragments, most of them smaller than the head of a pin. The friction of their passage through the upper air heats the fragments to incandescence and they burn up at a height of about 60 miles.

The larger ones give off enough light during their passage to be seen by the naked eye. On a dark clear night an observer will see two or three of these so-called shooting stars per hour. The very largest fragments, which occur only rarely, are not consumed at high altitudes but reach the ground and are sometimes recovered as meteorites.

How It Was Discovered

All meteors, even those which are too small to be seen, leave behind trails of charged particles. The trails are about 20 miles long and initially only a few inches across. While the trails only last about a second before they diffuse and disappear, during their short lifetime they are efficient reflectors for radio waves.

This fact emerged from the new science of radio astronomy which grew up after the war. Scientists in many countries studied these trails by the radar method, that is by bouncing radio waves off the meteor trails and receiving the return signal at the same station as was used for transmitting.

More recently one or two groups of researchers investigated the ability of the meteor trails to reflect the radio waves to a station 600 to 1,000 miles away from the transmitting station. One such group was working at the Radio Physics Laboratory of the Defense Research Board, just outside Ottawa.

As their work progressed it became more and more evident that the meteor trails, though transient, were remarkably well suited for communication purposes. Several hundred suitable trails occurred each hour.

Two Problems

In the development of the Janet system there were two major problems to be overcome. Obviously, the communication system would have to work in bursts, and in order to pass messages of reasonable length it would have to transmit them at very high speed (the rate that was finally chosen is in excess of 1,200 words per minute). Also, the system would need to know when a suitable meteor trail was present in order to make use of it.

This second problem was solved by placing both a transmitter and a receiver at each end of the circuit — the local receiver being tuned to the remote transmitter. Both transmitters were always on the air but not normally transmitting messages.

When a signal was received from the distant transmitter this was an indication that a suitable meteor trail was present and messages were then transmitted to the remote station as long as the signals from the distant transmitter were being received.

Looks Promising

The experimental operation of the Janet equipment is continuing. Although much experience has been gained, much more is needed. It is not yet possible to assess accurately the suitability of the system for particular applications.

Even after the system has moved out of its present experimental stage it will be months or even years before its worth in relation to other systems can be established but at the moment it looks very promising. If this promise is fulfilled it will be one more example of a long-sighted investment in basic research having paid off.

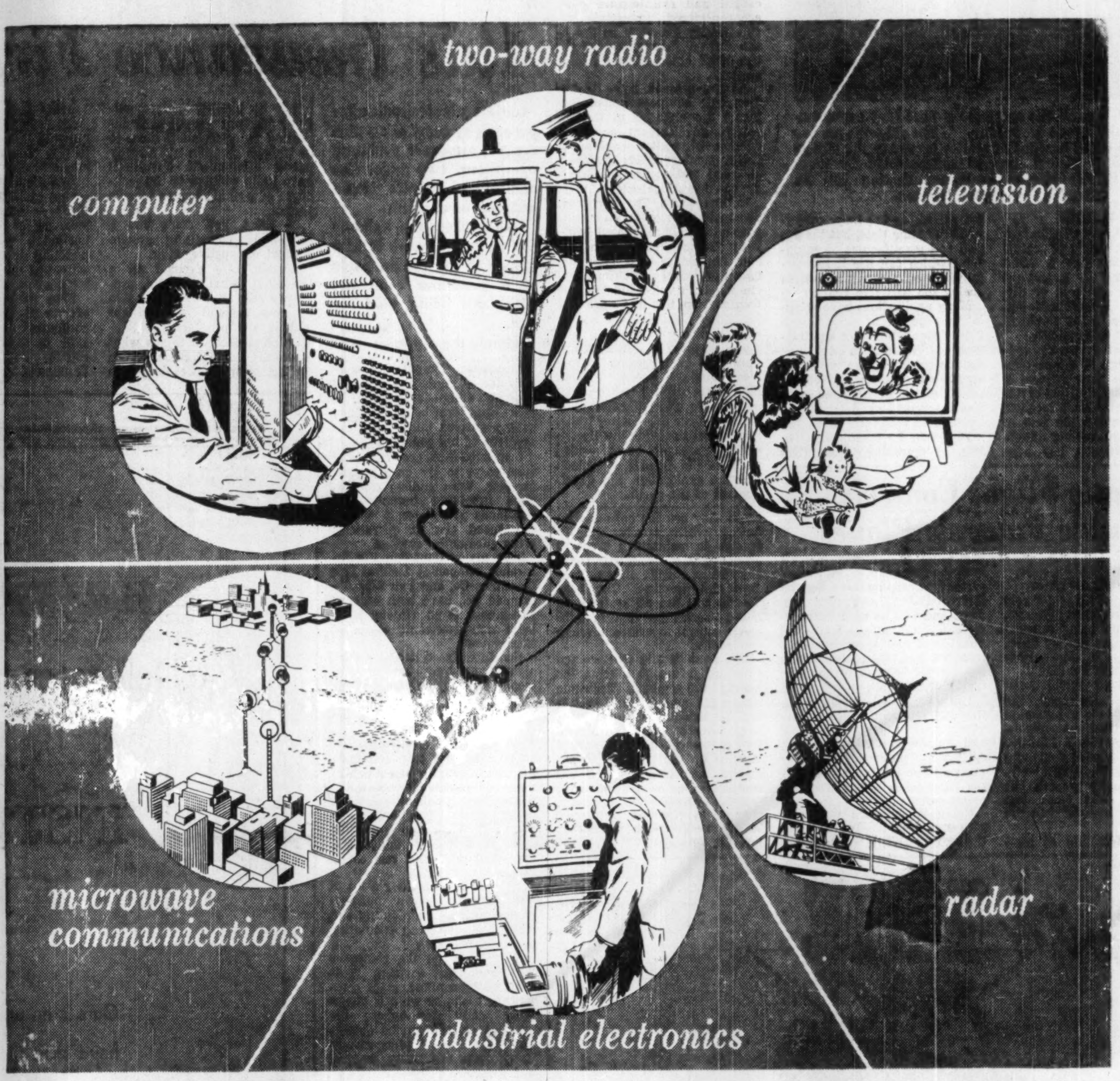
The research which started this development has no more practical end in view than to increase our knowledge concerning one small aspect of the natural world around us. The Defense Research Board might possibly have been criticized for supporting and encouraging so academic an outlook.

Most technological advances however, have stemmed from discoveries made in the more detached branches of science and the development of Janet is a typical example of a most promising dividend that has resulted from a fundamental research project.

The further development of Canada's resources will depend very much upon technological advances. High on the list of requirements is improved communication systems. It is to be hoped that the Janet system will help to fill the need.

The Benefits of Electronics are everywhere...

helping us to live better electrically



From early radio to TV and today's computers, electronics has speeded progress in industry, defence, communications, safety, and home comfort

REMEMBER those early radios—how hard they were to tune? How they whistled and howled? They were a far cry, both in design and performance, from the streamlined radios of today; yet they helped to change our lives because they were one of the beginnings of electronics. Over the years a great many new uses have been found for electronics. Today, though radio and television are still its most widely known applications, electronics affects almost every phase of our lives.

Electronics benefits us in many ways

Electronics has reduced the size of our world through microwave, flashing words and pictures across the country at the speed of light. Microwave provides the long distance TV hook-ups, an almost unlimited supply of long distance telephone circuits and special communications facilities such as teletype and facsimile.

Two-way radio summons taxicabs, maintains police and fire contacts, aids on construction jobs, provides telephones in cars, and serves us in many other useful ways.

Electronic computers speed research and industrial processes, requiring only minutes to work out problems that would take even highly qualified mathematicians months to solve.

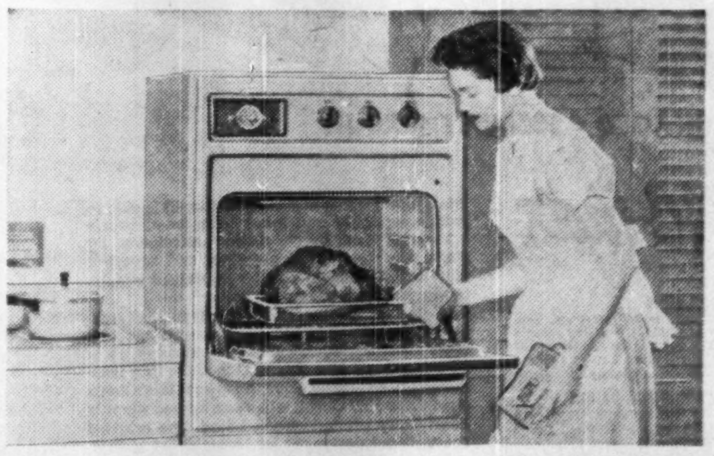
Radar, by showing objects beyond eyesight, guards our frontiers and brings new safety to our shipping lanes and airlines.

And industrial applications such as closed circuit TV, electronic sorters, thickness gauges and quality control speed and improve manufacturing processes.

In all these ways and many more, electronics benefits us all.

This Company was the first in Canada to build TV receivers and transmitters, two-way mobile radio, microwave communication equipment, and electronic tubes, including TV picture-tubes. Today it is developing and producing a growing list of electronic products for defence, industry and home use.

At Canadian General Electric, scientists and engineers are working constantly to increase the number of electronic applications—their aim, to help us live better.



This new G-E electronic oven, will cook a 10 lb. turkey in 25 minutes; a 6 lb. frozen roast of beef in 45 minutes; 3 apple pies in 14 minutes. A special electronic tube changes electric current into ultra-high frequency radio waves. These penetrate food and cook it uniformly all the way through . . . amazingly fast! Browning is done with oven's conventional Calrod elements.

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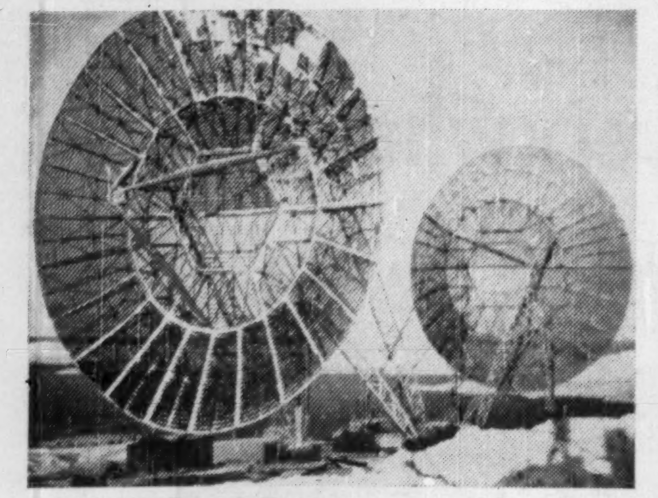
Scatter Radio Waves Will Aid Small Firms



THESE HUGE parabolic antennae are used for communications on the arctic Dew Line. When microwaves are broadcast, a small amount of scatter occurs in the atmosphere. This is picked up and concentrated by these antennae. Effect: Microwave communication can be extended beyond the horizon.

By E. H. EDGE
Collins Radio Co. of Canada Ltd.

The basic principle of scatter transmission is that a radio wave, traveling in a straight line, becomes scattered or diffused in the troposphere and ionosphere due to the electrical turbulence in these regions.

A small, but relatively constant percentage of the original radio energy is then changed in direction and transmitted earthwards, eventually being received at a point beyond the line of sight of the transmitting station.

This phenomenon has been recognized and partly understood for some time, but the design and manufacture of equipment which can use it successfully has only been undertaken during the past five years.

Many applications have arisen for this equipment, since it provides dependable voice and teletype communications over long distances without the use of intermediate repeater systems.

Single scatter systems may also be connected in tandem to cover more than 1,000 miles. The system can be completely mobile by mounting transmitters and receivers for each terminal in a standard 34-ft. trailer.

This is the type of system that could be used by construction companies, exploration groups and anyone whose communications needs are temporary or transient. It costs more than conventional microwave equipment.

At about $60,000 per terminal, though, per circuit mile costs can be equal to or less than the cost of wires or conventional microwave when a number of channels are required and when capital and maintenance costs are considered. In certain circumstances the very nature of the terrain may eliminate the use of all other systems except scatter.

At the present time, several electronic equipment manufacturers are engaged in the research, development and production of scatter equipment. Government contracts have been awarded and equipment delivered to operational sites.

Collins Radio Co. conducted demonstrations of scatter this year with trailer mounted 1,000-watt stations between Calgary and Lethbridge and later between Montreal and Ottawa. Including both voice and teletype transmission, this was a preview for many Canadians of scatter applications.

The response by visiting representatives of telephone companies, railways, power utilities, oil and gas utilities and the armed services was enthusiastic. It would appear that scatter transmission will provide the electrical seven-league boots needed for both the defense of Canada and the exploration and development of the north.

Automatic Flight Controls Will Guide Future's Planes

By J. P. MILLAR
Electronic Systems Engineer,
Trans-Canada Air Lines

Electronics plays a major role in modern transport aircraft. Today pilots are being relieved of more and more routine tasks, allowing them to concentrate on management of the flight.

With the new navigational systems being developed, the next decade will see an increased use of automatic flight controls. A great many safety features are built into these systems and fast-thinking servo control circuits can actually smooth out turbulent air and place less strain on the airframe than the best pilot.

Another application of electronics in present-day aircraft is in the fuel quantity indicating systems. These systems will be improved over the next ten years and will be used to transfer and select automatically the quantity of fuel being consumed from various tanks to maintain the correct balance of the aircraft during flight.

Known as fuel management, this will relieve the pilot of another routine task. Accuracy and automatic control of fuel sytems are increasingly important; a large jet aircraft such as the DC-8 holds over 20,000 Imperial gallons of fuel.

Cabin temperature and pressure are automatically controlled through electronic circuits because they are the only control devices which can act quickly enough to maintain a properly air-conditioned cabin with rapid changes in outside air temperature and pressure. The next decade will see all systems on board aircraft that require automatic control, operated through electronics.

The next decade will see the spinning gyroscope become the heart of the airplane. Electronic computers and control devices will be navigating the airplane automatically without the need for reference to navigational stations on the ground. Called inertial navigation, this is accomplished by measuring, with almost unbelievable accuracy, changes in direction and speed in all axes through which the aircraft moves.

with ERIE PAC*

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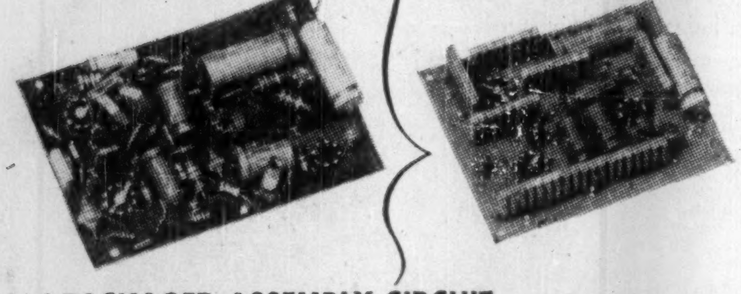

*PACKAGED ASSEMBLY CIRCUIT

PAC-Facts

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PAC requires fewer insertions. Simplified equipment. Smaller chassis area. Reduced inspections. Fewer items purchased. Fewer chassis holes. Simplified chassis wiring.

UNIQUE TERMINAL DESIGN
The Erie PAC terminal provides a "U" shaped cross section and tapers in both planes to assure easy insertion, self-adjusting—rigid fit, and large contact area.

FLEXIBILITY
All Resistance values between 5 ohms and 50 megohms. Wide range of capacitor temperature characteristics. Parallel and series arrangements readily obtained. Excellent circuit flexibility thru use of printed wiring type base.

REDUCED CHASSIS AREA
Chassis area is reduced by use of the vertical plane design feature. 15 components per square inch.

See us at the Canadian IRE
Booth No. 358

Erie's new Packaged Assembly Circuit is able to reduce assembly and labor costs for electronic component users by simplifying automation. By employing standard size resistor and capacitor pins, a PAC module can be assembled simply, automatically, and economically.

PAC will drastically reduce the number of component insertions in TV, radio, computers, and other electronic equipments by combining up to 90 components into one PAC module. The illustration above clearly exemplifies how Erie's Packaged Assembly Circuit will clean up and simplify nearly any printed circuit board. The original conventional design, at left, contains 44 individual components. The electrically equivalent Erie PAC design, at right, contains but 16 individual units—*a savings of 64% in the number of insertions.*

Experimental PAC Design Kits have been prepared and are available at a moderate cost. The 5% PAC Kit includes 195 different resistance and capacitance values, strips, wiring boards, clips, eyelets, and other material essential for building complete PAC circuits. The 10% PAC Kit contains 105 values along with the other items, and the 20% PAC Kit has 54 values plus equipment. This Design Kit is your key to cost savings.

Write for Erie Engineering Bulletin No. 450-1

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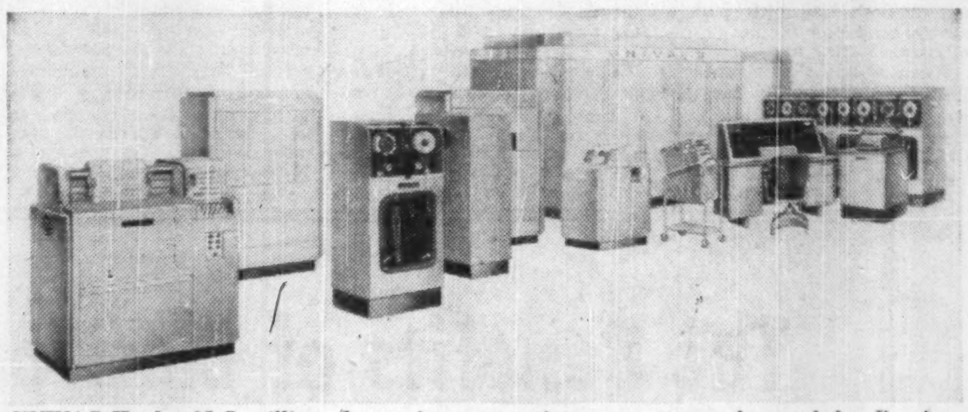


UNIVAC II, the $1.7 million electronic computation system manufactured by Remington Rand will go into insurance companies in Canada soon.

$1.7 Million 'Brain' Aids Insurance Firms

Large-scale electronic computation systems are a natural for insurance company operations. Two major Canadian companies have ordered installations.

But it takes long, exhaustive study and work to fit a system to the requirements of a particular company. Some are being tried for size.

Here's the story:

Electronic computation systems for business are designed to do one thing—save money. As such they are being prodded with a curious finger by management of big companies.

Insurance firms are among the most eager to try on a system for size. With endless calculations involving hundreds of thousands of policies, a "brain" can speed clerical operations, bring substantial savings.

Two major Canadian life insurance companies **London Life Insurance Co.** and **Sun Life Assurance Co.**, have both ordered **Remington Rand** Univac II, a large-scale electronic computation system.

Sun Life placed its order after a three-year-long study of electronic systems. Scheduled installation date is March, 1957.

Company expects to use its computer by:

- Transcribing all information on policies onto tape and have the computer take over much of the work associated with them.
- Computing, calculating, tabulating special assignments required by different departments such as mortality tables and statistical tables for real estate division.
- Having it look after a lot of the company's own business chores such as maintaining and writing payrolls and calculating sales commissions.

What goes on the computer first is not yet decided. This will be determined, state company officials, by what is physically ready and where the greatest savings can be obtained. Right now a wide variety of projects are being mapped out simultaneously.

Long Study

Biggest problem will be in the field of ordinary life insurance policies, it is understood. To handle ordinary life work on the computer, the activities of several departments will have to be combined. Company expects to have group life business on the machine within one year of start-up, ordinary life within two years.

London Life undertook a long study of the pros and cons of electronic systems before ordering its installation. These systems are expensive and to be operated to advantage in an insurance company, the firm has to have a large volume of business and a record of rapid growth.

London Life's scale of operations in 1954, when seriously considering investing in an electronic system, involved 400,000 policies calling for:

— 84,000 changes involving policies alone;

— 330,000 dividend transactions;

— 1,208,000 collections or recordings.

And that's not all. Records of policies were maintained in some 12 different sets of files — not always in the same department — and many transactions required reference to all or nearly all of these files. Altogether, it's estimated that the 400,000 policies involved 3,217,000 transactions of one sort or another in one year.

Single Master Record

With an electric computer a single master record can be used and all changes in policies and other transactions made automatically in the computer — without manual interference.

While computers speed operations and cut down on staff expansion, they have an added bonus for file-heavy insurance companies. Computers save space. The complete details, including addresses, of some 500,000 life policies can be housed on 75 spools. These take up six cu. ft. Equivalent information on punch cards would need 600 cu. ft.

Behind the well-publicized capacity of the machine is a lesser-known characteristic. It has to be adapted to the particular needs of the company installing it. Specialists have to be trained. Existing and already partly mechanized operations have to be adapted to the technique of a single comprehensive system.

In short, you don't buy a large-scale computing system without exhaustive work.

London Life decided on a Univac II. What they did, provides a case study. Here's a step by step account of decision-making and progress.

Original decision to see what electronic computers could do for the company was based on a belief that the company was large enough and business was growing fast enough to be able to use, economically, expensive new electronic methods.

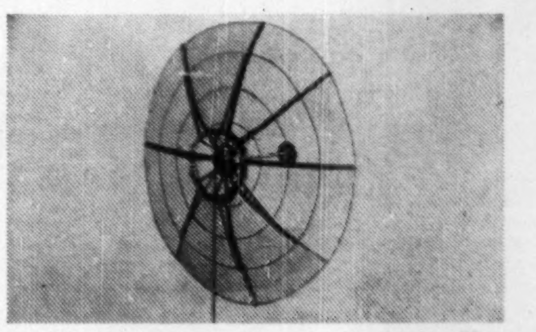
Investigations began in the spring of 1953. A committee of three — an actuary, assistant manager of the statistical department, a member of the planning department — took a course at the University of Toronto's computation centre.

Five months later members of one of the leading business equipment firms visited London Life to conduct a one-week course. After this — and not because of it, company states — it was decided to give electronic computation serious study and appraisal.

Work involved in the maintenance of ordinary policies during 1954 was taken as the yardstick by which the company's operations would be measured. Three committees were appointed to undertake an extended study and evaluation.

The three-man working committee included: an assistant actuary as chairman, the supervisor in the secretary's office, the statistical department's assistant manager.

They reported to a planning committee made up of the comptroller, an associate actuary, the inspector of branch offices, manager of personnel planning, and the manager of the statistical department.



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Met-Men Watch Weather Afar

By W. R. SMITH
Meteorological Division,
Department of Transport

The most important application of electronics to meteorology is as a measuring tool. Electronic methods are used for measurement of such meteorological quantities as pressure, temperature, humidity, winds, horizontal visibility, height of cloud base and storm detection.

Electronics were first used for measuring with the invention of the radiosonde. Routine ascents were started in the U. S. in 1936 and in Canada in 1941.

One of the latest developments in meteorology is the application of radar for storm detection. It has been found that the water droplets or ice particles in a well-developed thunderstorm give a very good return on a radar screen.

A 3-cm. radar detects small drops and at the same time avoids the difficulty of absorption by the water vapor in the atmosphere. Equipment is available with a maximum range of 200 miles and with sufficient accuracy to yield good measurement on the direction and rate of travel of the storm.

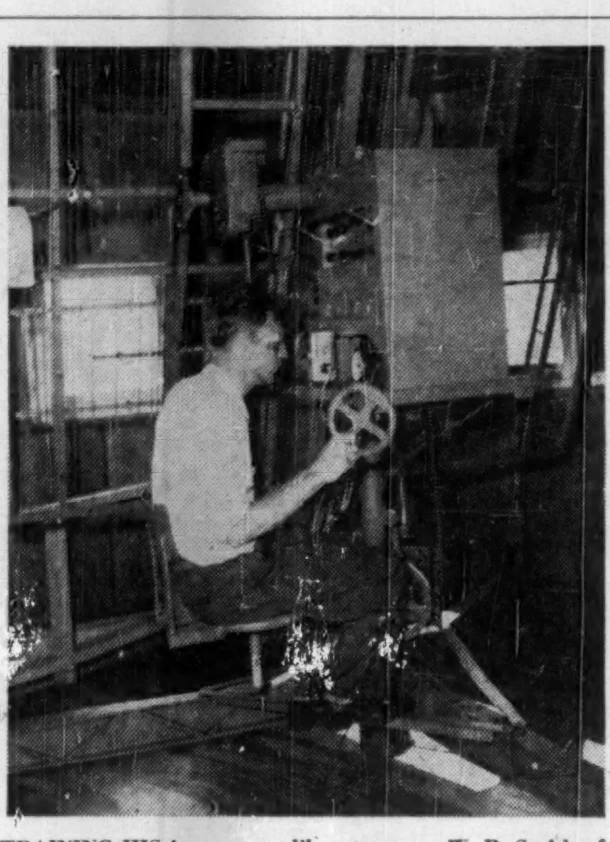
This is a boon to the forecaster, who can now watch the growth of an isolated storm or band of showers, quickly determine its path, and issue a warnings to the districts affected. The first operational installation was made last month at Malton, Ont.

Several systems are being developed to aid the aeroplane pilot judging the distance of the end of the runway when he comes in for a landing. Two meteorological factors determine this distance — the horizontal visibility and the height of the cloud base. Electronic methods are offering the possibility of giving instrumental measurements of these two quantities.

For judging horizontal visibility, a transmissometer is used to measure the optical transmission of the atmosphere. A well-focused beam of light of constant intensity shines along a measured base line. At the other end the light is received by a photo-electric cell, the output of which is amplified and fed into an indicating device in the office.

Under conditions of unlimited visibility the equipment will indicate 100% transmission along the optical path. As the visibility decreases because of fog, precipitation, smoke, or any other local cause, the indicated transmission decreases. The relation between percentage transmission and visibility follows a definite mathematical formula, so that the one can be computed in terms of the other.

Similar electronic means are used to measure the height of the cloud base.


TRAINING HIS instrument like a gunner, W. R. Smith of the Dominion Meteorological Division tracks a weather balloon with a VHF-DF (Very High Frequency-Direction Finder) system.

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Radio Experts Exchange Ideas

By R. C. POULTER
Convention Committee,
Institute of Radio Engineers

One of the most important factors in the unparalleled expansion of the electronics industry, throughout North America particularly, is the giant Institute of Radio Engineers, a 55,000-member association of radio engineers employed in practically every branch of radio, home and industrial television and electronics.

The Institute of Radio Engineers is a voluntary society which has been disseminating engineering information to its members the world over since 1912. It has nearly 2,000 members in Canada, with 13 sections or branches conducting monthly technical meetings and discussions.

Dr. John T. Henderson, principal research officer, National Research Council, Ottawa, is Canadian regional director. He has been nominated for the office of president of the international organization for 1957.

ROBERT C. POULTER, director of education, Radio College of Canada, senior member, Institute of Radio Engineers.

Headquarters of IRE is located in New York. There are sections throughout the world. Canadian sections are in Newfoundland, Quebec, Montreal, Ottawa, Bay of Quinte, Toronto, Hamilton, London, Winnipeg, Edmonton, Calgary, Regina, Vancouver.

The Canadian part of the organization was founded 30 years ago, the original charter for a Canadian section being issued in 1926, with 26 charter members. The first president was C. L. Richardson, a well-known figure in the electronics industry.

IRE is an incorporated non-profit organization established "for the advancement of the theory and practice of radio and electronics, including allied branches of engineering and the related arts and sciences."

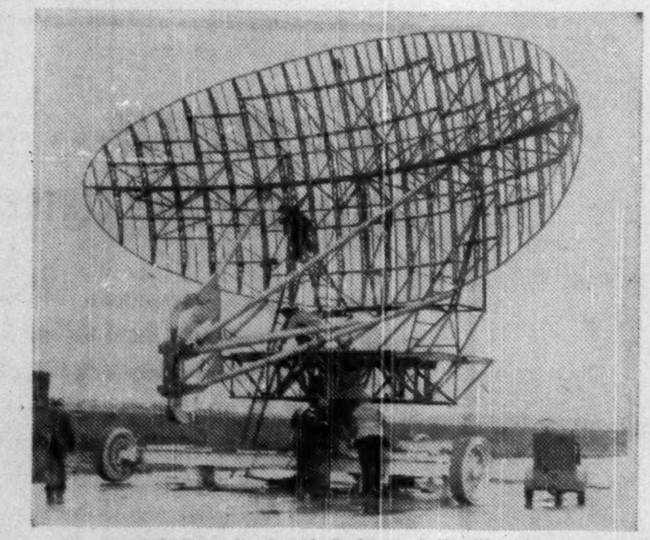
The Institute publishes technical papers, reports and general information of interest to electronics engineers.

Perhaps the most important single activity of the institute is the publication of its monthly "Proceedings of the IRE," the first issue of which appeared in 1913. The official publication of the institute, it contains technical papers, discussions and communications as well as IRE standards approved by technical committees.

The Institute of Radio Engineers' convention and exposition in Toronto on Oct. 1, 2 and 3 will be the largest and most dynamic program of its kind ever presented in Canada.

Several thousand engineers, scientists, executives, buyers and technicians from all parts of the world are attending.

FLEET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Sun Life of Canada installation date: April, 1957

London Life installation date: January, 1958

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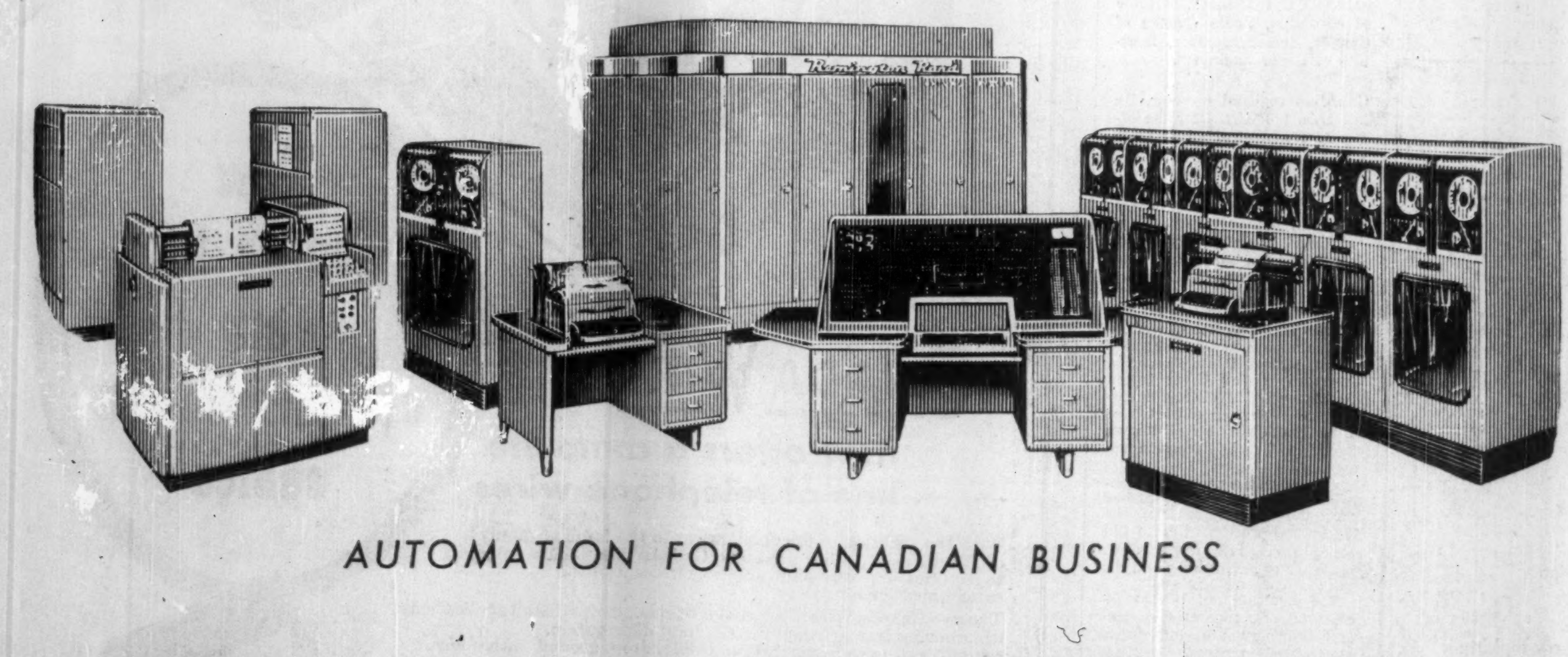
Once the unprecedented advantages of electronic computing had been analyzed, decision was reached to apply them to the benefit of policyholders, agents, and staff through Remington Rand's Univac System.

Univac is a computing system completely self-checking for accuracy and operating at phenomenal speeds. Its economies have been demonstrated in the insurance field as well as in industry, transportation, distribution, science and government.

London Life and Sun Life of Canada both realize that Univac offers the inherent advantages of electronics applied to insurance procedures. Far-sighted business leaders everywhere agree on the wisdom of this choice.



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